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# ARIZONA MEDICINE

JOURNAL OF ARIZONA MEDICAL ASSOCIATION

MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

SPECIAL:

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***Usage in Pregnancy:*** **Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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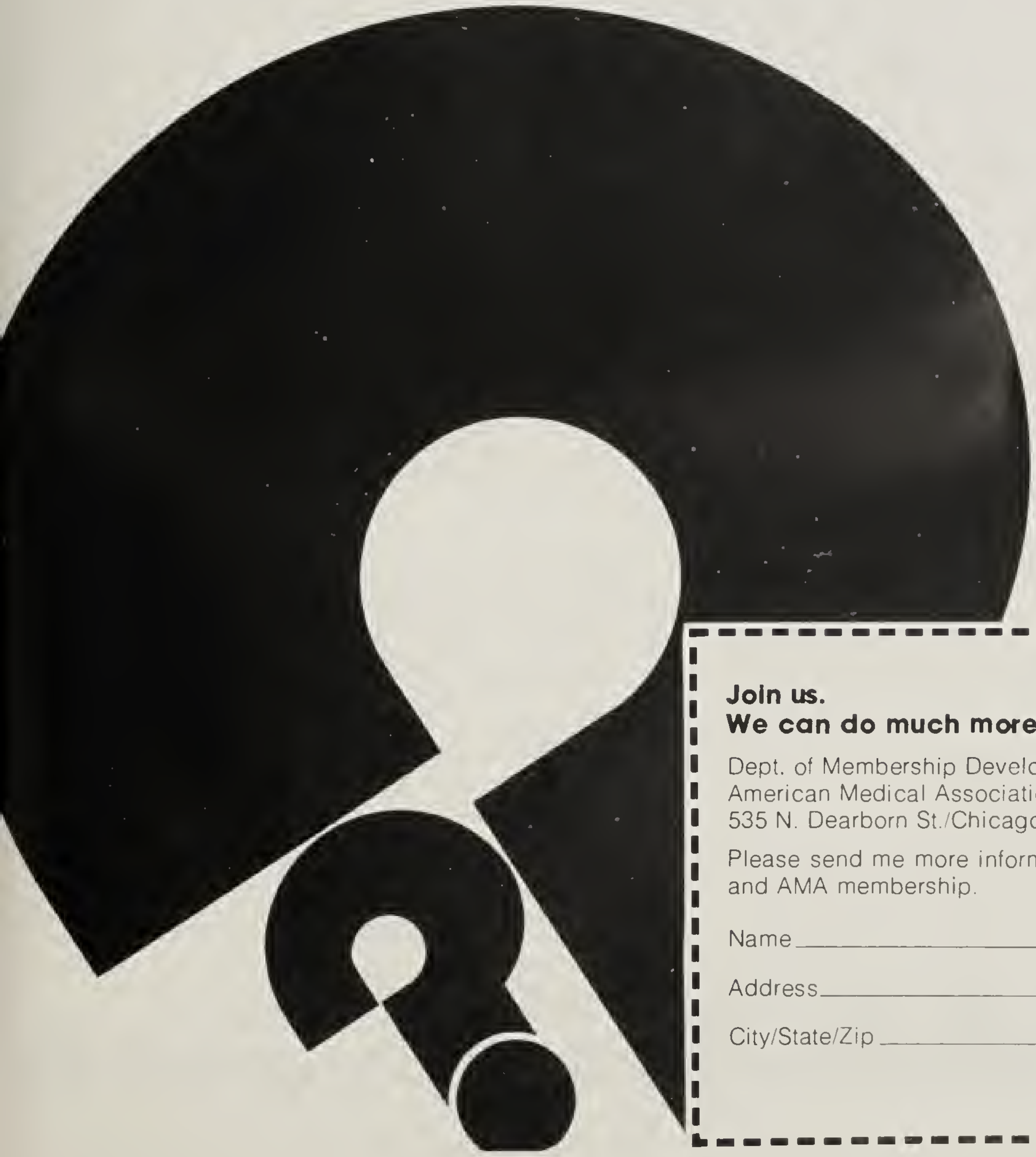

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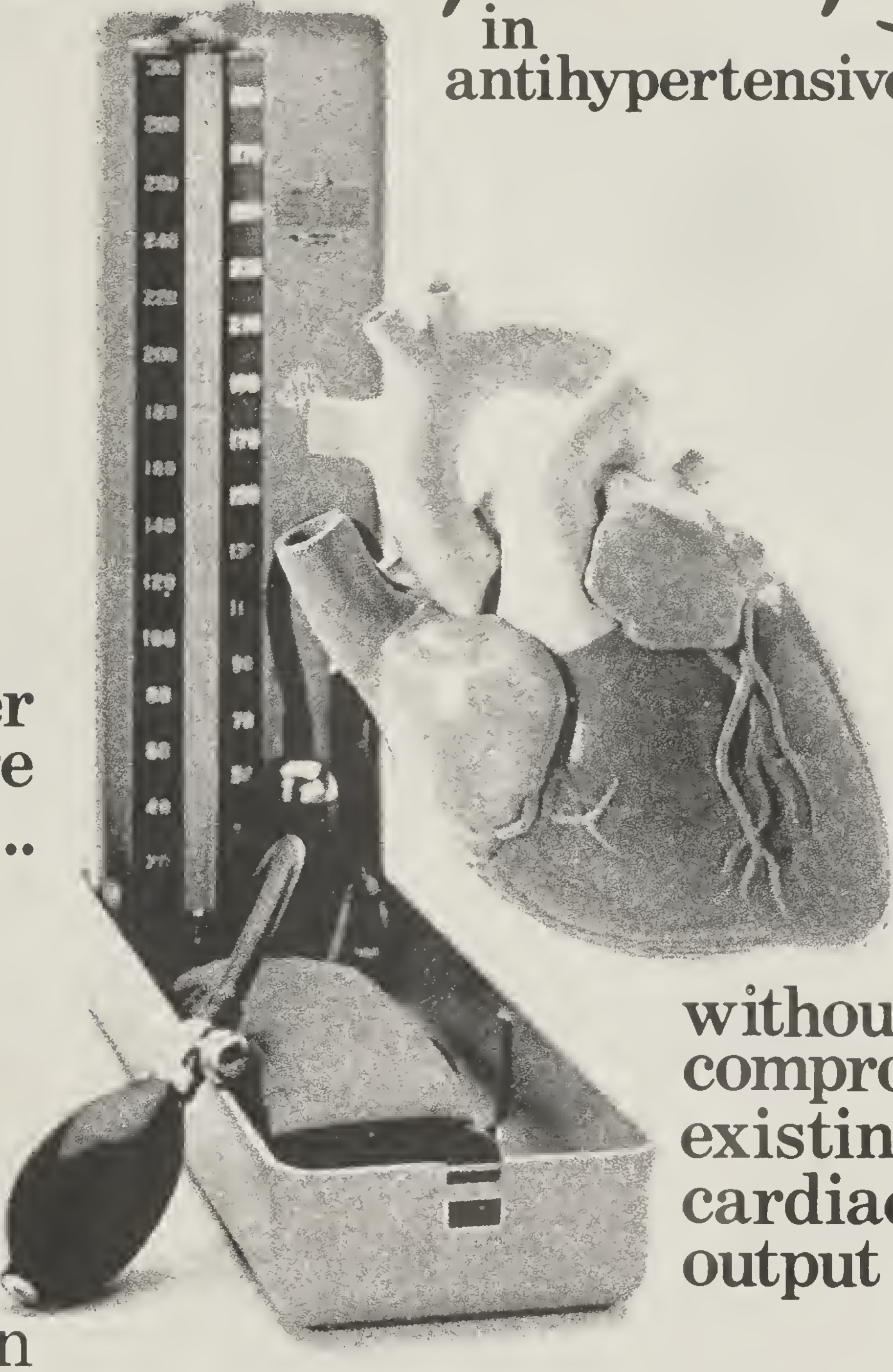

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**Warnings: It is important to recognize that a positive Coombs test, hemolytic anemia, and liver disorders may occur with methyldopa therapy. The rare occurrences of hemolytic anemia or liver disorders could lead to potentially fatal complications unless properly recognized and managed. Read this section carefully to understand these reactions.**

With prolonged methyldopa therapy, 10% to 20% of patients develop a positive direct Coombs test, usually between 6 and 12 months of therapy Lowest incidence is at daily dosage of 1 g or less. This on rare occasions may be associated with hemolytic anemia, which could lead to potentially fatal complications. One cannot predict which patients with a positive direct Coombs test may develop hemolytic anemia. Prior existence or development of a positive direct Coombs test is not in itself a contraindication to use of methyldopa If a positive Coombs test develops during methyldopa therapy, determine whether hemolytic anemia exists and whether the positive Coombs test may be a problem. For example, in addition to a positive direct Coombs test there is less often a positive indirect Coombs test which may interfere with cross matching of blood.

At the start of methyldopa therapy, it is desirable to do a blood count (hematocrit, hemoglobin, or red cell count) for a baseline or to establish whether there is anemia. Periodic blood counts should be done during therapy to detect hemolytic anemia. It may be useful to do a direct Coombs test before therapy and at 6 and 12 months after the start of therapy. If Coombs-positive hemolytic anemia occurs, the cause may be methyldopa and the drug should be discontinued. Usually the anemia remits promptly If not, corticosteroids may be given and other causes of anemia should be considered. If the hemolytic anemia is related to methyldopa, the drug should not be reinstituted. When methyldopa causes Coombs positivity alone or with hemolytic anemia, the red cell is usually coated with gamma globulin of the IgG (gamma G) class only. The positive Coombs test may not revert to normal until weeks to months after methyldopa is stopped.

Should the need for transfusion arise in a patient receiving methyldopa, both a direct and an indirect Coombs test should be performed on his blood. In the absence of hemolytic anemia, usually only the direct Coombs test will be positive. A positive direct Coombs test alone will not interfere with typing or cross matching. If the indirect Coombs test is also positive, problems may arise in the major cross match and the assistance of a hematologist or transfusion expert will be needed.

Fever has occurred within first 3 weeks of therapy, sometimes with eosinophilia or abnormalities in liver function tests, such as serum alkaline phosphatase, serum transaminases (SGOT, SGPT), bilirubin, cephalin cholesterol flocculation, prothrombin time, and bromsulphalein retention. Jaundice, with or without fever, may occur, with onset usually in the first 2 to 3 months of therapy. In some patients the findings are consistent with those of cholestasis. Rarely fatal hepatic necrosis has been reported. These hepatic changes may represent hypersensitivity reactions; periodic determination of hepatic function should be done particularly during the first 6 to 12 weeks of therapy or whenever an unexplained fever occurs. If fever and abnormalities in liver function tests or jaundice appear, stop therapy with methyldopa. If caused by methyldopa, the temperature and abnormalities in liver function characteristically have reverted to normal when the drug was discontinued. Methyldopa should not be reinstituted in such patients.

Rarely, a reversible reduction of the white blood cell count with primary effect on granulocytes has been seen. Reversible thrombocytopenia has occurred rarely When used with other antihypertensive drugs, potentiation of antihypertensive effect may occur. Patients should be followed carefully to detect side reactions or unusual manifestations of drug idiosyncrasy.

*Use in Pregnancy:* Use of any drug in women who are or may become pregnant requires that anticipated benefits be weighed against possible risks; possibility of fetal injury can not be excluded.

**Precautions:** Should be used with caution in patients with history of previous liver disease or dysfunction (see Warnings). May interfere with measurement of: uric acid by the phosphotungstate method, creatinine by the alkaline picrate method, and SGOT by colorimetric methods. Since methyldopa causes fluorescence in urine samples at the same wavelengths as catecholamines, falsely high levels of urinary catecholamines may be reported. This will interfere with the diagnosis of pheochromocytoma. It is important to recognize this phenomenon before a patient with a possible pheochromocytoma is subjected to surgery. Methyldopa is not recommended for patients with pheochromocytoma. Urine exposed to air after voiding may darken because of breakdown of methyldopa or its metabolites.

Stop drug if involuntary choreoathetotic movements occur in patients with severe bilateral cerebrovascular disease. Patients may require reduced doses of anesthetics; hypotension occurring during anesthesia usually can be controlled with vasopressors. Hypertension has recurred after dialysis in patients on methyldopa because the drug is removed by this procedure.

**Adverse Reactions:** *Central nervous system:* Sedation, headache, asthenia or weakness, usually early and transient; dizziness, lightheadedness, symptoms of cerebrovascular insufficiency, paresthesias, parkinsonism, Bell's palsy, decreased mental acuity, involuntary choreoathetotic movements; psychic disturbances, including nightmares and reversible mild psychoses or depression.

*Cardiovascular:* Bradycardia, aggravation of angina pectoris. Orthostatic hypotension (decrease daily dosage). Edema (and weight gain) usually relieved by use of a diuretic. (Discontinue methyldopa if edema progresses or signs of heart failure appear.)

*Gastrointestinal:* Nausea, vomiting, distention, constipation, flatus, diarrhea, mild dryness of mouth, sore or "black" tongue, pancreatitis, sialadenitis.

*Hepatic:* Abnormal liver function tests, jaundice, liver disorders.

*Hematologic:* Positive Coombs test, hemolytic anemia. Leukopenia, granulocytopenia, thrombocytopenia.

*Allergic:* Drug-related fever, myocarditis.

*Other:* Nasal stuffiness, rise in BUN, breast enlargement, gynecomastia, lactation, impotence, decreased libido, dermatologic reactions including eczema and lichenoid eruptions, mild arthralgia, myalgia.

**Note:** Initial adult dosage should be limited to 500 mg daily when given with antihypertensives other than thiazides. Tolerance may occur, usually between second and third month of therapy; increased dosage or adding a thiazide frequently restores effective control. Patients with impaired renal function may respond to smaller doses. Syncope in older patients may be related to increased sensitivity and advanced arteriosclerotic vascular disease; this may be avoided by lower doses.

**How Supplied:** Tablets, containing 125 mg methyldopa each, in bottles of 100; Tablets, containing 250 mg methyldopa each, in single-unit packages of 100 and bottles of 100 and 1000; Tablets, containing 500 mg methyldopa each, in single-unit packages of 100 and bottles of 100.

*For more detailed information, consult your MSD representative or see full prescribing information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, Pa. 19486* J6AM07 (707)

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Parenteral administration is not recommended in the presence of hypotension or tachycardia.
Intravenous administration should not be given because of increased likelihood of side effects.
Adverse Reactions: On rare occasions oral administration of the drug has been associated in time with the occurrence of hypotension, tachycardia, nausea, vomiting, dizziness, abdominal distress, and severe rash. If rash appears the drug should be discontinued.
Although available evidence suggests a temporal association of these reactions with isoxsuprine, a causal relationship can be neither confirmed nor refuted.
Administration of single dose of 10 mg. intramuscularly may result in hypotension and tachycardia. These symptoms are more pronounced in higher doses. For these reasons single intramuscular doses exceeding 10 mg. are not recommended. Repeated administration of 5 to 10 mg. intramuscularly at suitable intervals may be employed.
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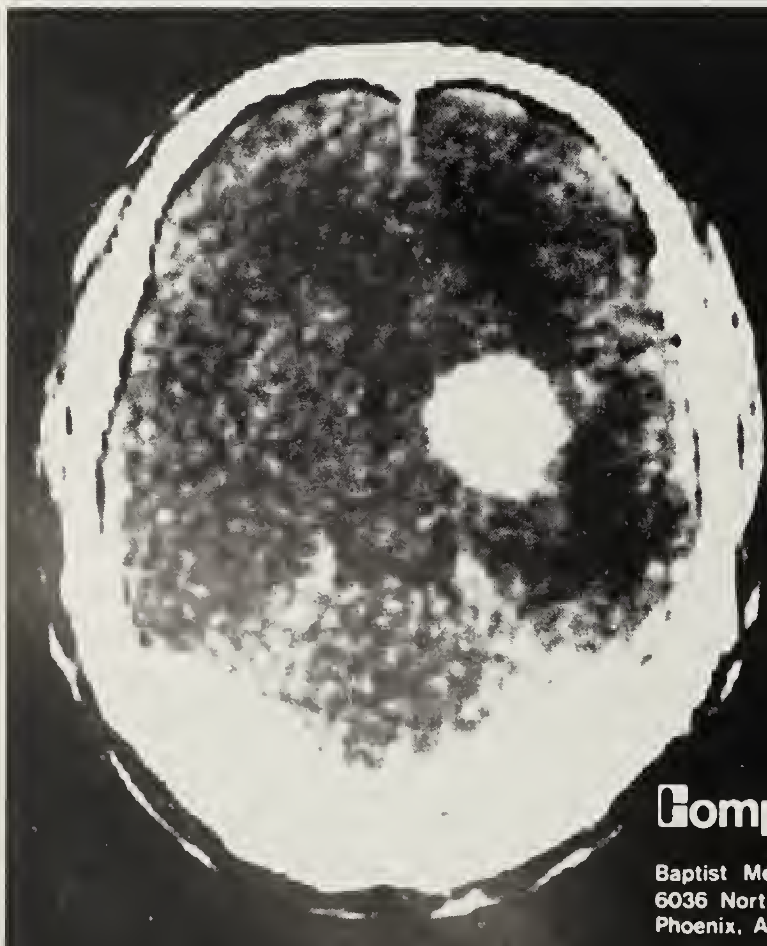

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*Effective*: Management of nausea and vomiting and dizziness associated with motion sickness.

*Possibly Effective*: Management of vertigo associated with diseases affecting the vestibular system.

Final classification of the less than effective indications requires further investigation.

CONTRAINDICATIONS. Administration of Antivert (meclizine HCl) during pregnancy or to women who may become pregnant is contraindicated in view of the teratogenic effect of the drug in rats.

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*Usage in Children*: Clinical studies establishing safety and effectiveness in children have not been done; therefore, usage is not recommended in the pediatric age group.

*Usage in Pregnancy*: See "Contraindications."

ADVERSE REACTIONS. Drowsiness, dry mouth and, on rare occasions, blurred vision have been reported.

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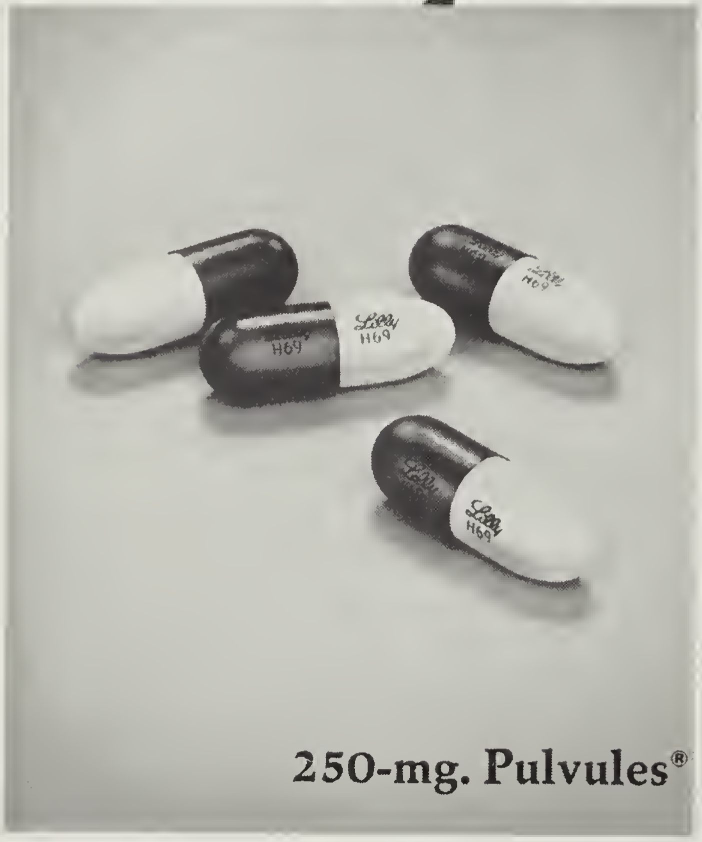

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# Causes of Respiratory Allergy in Arizona
## Part II

**Hugh C. Thompson, M.D.**
**Elizabeth Gundersen, M.D.**
**Richard A. McNeely, M.A.**

**Editors**
**Robert J. Clark, M.D.**
**Lynn M. Taussig, M.D.**
**William C. Weese, M.D.**

### Man

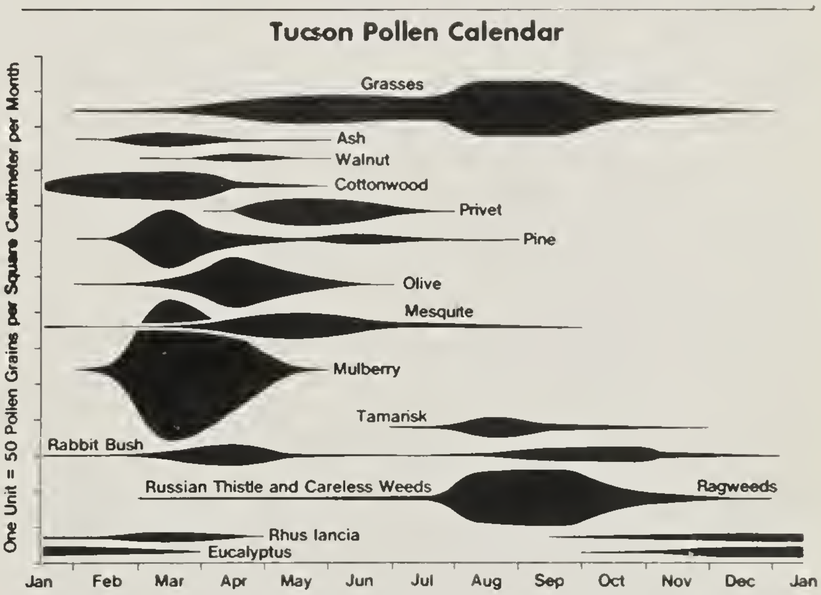
Man influences allergic disease through imported vegetaion, industry, and population characteristics.

### mported Vegetation

Ornamental grasses and trees, crops raised for profit, and weeds which flourish only where topsoil is disturbed are mportant. In the past, Arizona's pollen problem was tremendously oversimplified by physicians from other states, who believed that few allergenic plants flourished here. Because of this misconception, individuals with pollen alergy migrated to the state. The pollen calendar (Figure 3) adapted from data gathered over twenty-five years at the Tucson Clinic by Draper and Hayes, shows no season entirely pollen-free.

Bermuda grass starts pollinating in mid-spring, peaks in ate spring, and pollinates again in late August and September. It is the commonest, hardiest, and cheapest lawn grass in the southern United States and tolerates desert heat, dryness, and physical abuse. It seldom gets the every four-day mowing needed to prevent flowering. Johnson grass, which grows in roadside ditches, is of secondary importance.

Trees contribute their pollen starting with cottonwood in February, while mulberry, olive and other decorative trees bloom later. Mulberry yields the highest pollen counts of any allergenic plant. Native cottonwood and ash are decreasing n number, while imported elm and rhus lancia, a sumac from Africa, are increasing. Winter months were formerly practically pollen free. Rhus lancia and eucalyptus, even though insect pollinated, may produce symptoms in those intimately exposed.



Although a few weeds, especially rabbit bush, bloom in mid-spring, August through October is the chief weed season. Russian thistle and careless weed are major offenders. In most of the country, ragweed is the major pollen offender. Relatives of the Eastern ragweed flower in spring and fall in Arizona; however, the pollen concentration is not great and its effect uncertain. A positive skin test to ragweed pollen is common.

---

From: Dept. of Pediatrics, Arizona Health Sciences Center (Drs. Thompson & Gundersen), and Medical Audiovisual Services U. of A. Tucson (Mr. McNeely).

Agriculture has brought new pollens to the state. Pecan, whose pollen is a major allergen of the Southeast, is now being cultivated here. Alfalfa and sugar beet are important in some areas. Weeds follow certain crops and thrive where irrigated. Russian thistle (tumbleweed) inadvertently introduced into the Dakotas by Mennonite farmers in the early 20th Century, thrives on overgrazed land enriched with animal nitrate deposits. Many mistakenly believe it to be native. Careless weed, used as ground cover by Phoenix citrus ranchers in the 1920s, produces light, highly allergenic pollen that can be carried for miles. Heavy insect-borne citrus pollen troubles only those in the immediate vicinity.

### Industry and Air Pollution

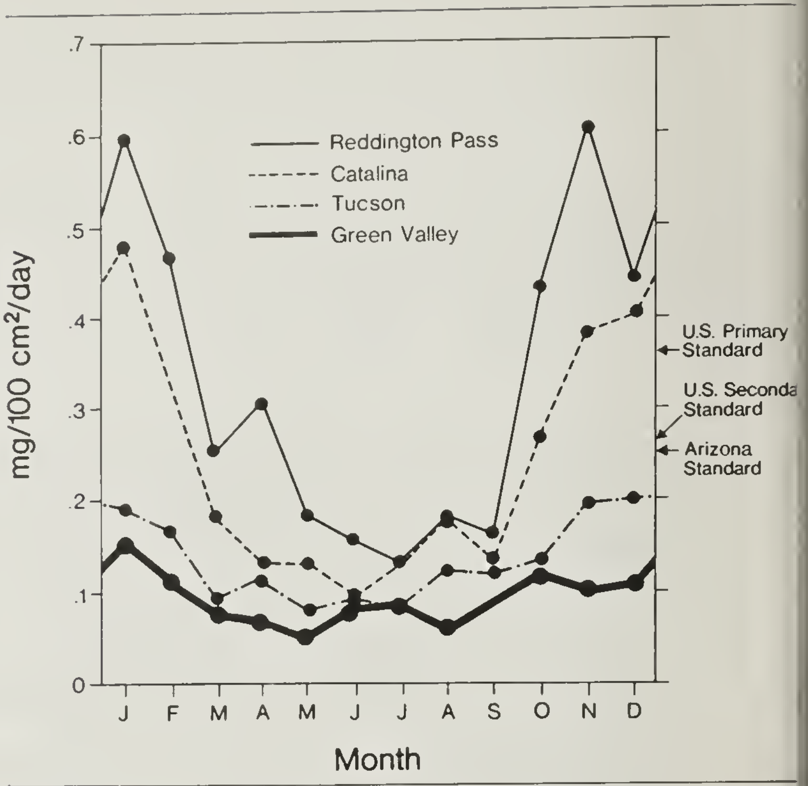
Mining and agriculture affect allergic disease through air pollution. The effect of pollution from smelters on those with chest disease is a very sensitive point in this state. Lebowitz, et al. compared lung function of children in an Arizona smelter-mining town after exercise on a "high" pollution, high temperature day, to that on a "low" pollution, low temperature day.[7] The forced expiratory volume in one-second ($FEV_1$) and maximum mid-expiratory flow rate (MMEF) were both lower in the presence of high pollution on those with chest disease have been repeatedly documented. Carnow showed the relationship between airborne sulfur concentration and the incidence of exacerbations of bronchitis in adults. Girsh in Philadelphia documented a significant increase in childhood asthma on days of high barometric pressure and increased pollution.

Geography and climatic factors affect the concentration of industrial air pollutants. Hartman demonstrated the relationship between the proximity to smelters and the concentration of sulphur dioxide (Figure 4).

The Pima County Health Department record shows a clear relationship between sulphur dioxide production and smelters.[8] Nitrous and sulfurous oxide concentration vary considerably from city to city. Hayden, a mining town, has a high level of sulphur dioxide as compared to Flagstaff, Page, or the Grand Canyon. Phoenix and Tucson have high levels of nitrous oxides because of automobile pollution. Agriculture is associated with pollens and spraying chemicals from planes or trucks. These are highly irritating to some allergic individuals.

### Population Characteristics

Phoenix, Tucson, and Yuma have grown several-fold in the last 40 years. The speed of this growth led to unpaved roads with increased dust and pollen dispersal. Coincident with population change is the increase in automobiles exhaust pollution. The population of Arizona has been heavily weighted with people who have come here because of asthma and sinusitis. In a survey of Anglo-whites in Tucson, Lebowitz and Burrows found that those residents who moved here for respiratory disease had an incidence of physician-diagnosed asthma eleven times the national rate, with allergic rhinitis being ten times more common. Many of these people have produced children who are now called "natives" but who still carry genes predisposing them to allergy. This may partially account for the fact that Tucson "natives" have an incidence of asthma almost twice the national rate and seven times as much allergic rhinitis. The prevalence of allergy in Mexican-Americans in Arizona has never been accurately determined. In Mexico, 18-25% of the population is allergic and from 1.3-2.2% have asthma.[10] The Indian population has been considered less subject to asthma and hay fever than the Anglo-whites. Justice, of the Indian Health Servic studied the percentage of visits for asthma and hay fever several Indian Health Hospitals. At Sacaton, Winterhave and Phoenix, the incidence was 1/3 to 1/2 the general U. average. At Parker Hospital, however, 4% of the total visi by this small group of 1,700 people were for asthma and ha fever compared to 3% of the United States. In Parker, the are 57 kinds of pollen with year-round prevalence. Navaj are reputed to have very little asthma, a finding which ma correlate with their barren and arid land and a minimum cultivated crops. Further studies of allergy in Norther Arizona Indians are certainly indicated.



### Infection

The relationship between infection and allergic disease not unique to Arizona. Climate, air pollution and man i fluence respiratory infection. Coccidioidomycosis, howeve does not affect allergic disease.

Allergic disease in Arizona is the result of a complex grou of interrelated factors which vary widely, not only withi the state but in different areas of towns and cities. Its prop management requires an intimate knowledge of the patient macro and microenvironment.

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Complete Bibliography Available on Request

## Drug Therapy Problems

**ROBERT E. PEARSON, M.S., R.Ph.**

### ew Anti-Convulsant For Children

Phenobarbital and dilantin have long been the standard nti-convulsant agents. However, a recent trial used Tegretol arbamazepine). In 37 children who completed the study, ırbamazepine was found to offer statistically significant ıvorable results in controlling seizure disorders and in nproving learning and behavior.

hain, R.J. (Department of Pediatrics, UCLA School of Medicine, Los An-les, CA 90024), Ward, J.W., and Guthrie, D.: Carbamazepine as an Anti-nvulsant in Children, *Neurology* 27:476-480, 1977.

### / Filters Trap Amphotericin B

In-line filters on intravenous equipment may seriously fect the bio-availability of amphotericin B (fungizone) used ı the treatment of various fungal infections. A Virginia udy cautions that filters smaller than .45 $\mu$m should not : used with amphotericin B and that in any event, flow ıtes should be carefully monitored.

pple, M., Shadomy, S. (Box 85, MCV Station, Richmond, VA 23298), and spinel-Ingroff, A.: Availability of Active Amphotericin B After Filtration ırough Membrane Filters, *Amer Rev Resp Dis* 115:879-881, 1977.

### hildren Under Eight & Tetracycline = Trouble

Despite the 1975 American Academy of Pediatrics Com-ııttee On Drugs' stance that "There are few, if any, reasons ır using tetracycline drugs in children less than 8 years ld," a recent study observed that in the Tennessee Medicaid rogram, 7,000 out of 344,000 prescriptions were for tetra-ycline, written for the "under-eight" age group. Of 1,950 hysicians who prescribed tetracycline, general and family hysicians wrote for two-thirds of the drug quantity. Twenty-ıx physicians wrote 54% of the tetracycline prescriptions. he authors reiterate the Committee's statement, and call ır increased attention and concern among physicians.

ay, Wayne A. (Division of Biostatistics, Department of Preventive Medicine, anderbilt University School of Medicine, Nashville, TN 37232), Federspiel, harles F., and Shaffner, William: Prescribing of Tetracycline to Children ess Than 8 Years Old – A Two Year Epidemiologic Study Among Ambula-ry Tennessee Medicaid Recipients, *JAMA* 237:2069-2074, 1977.

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ddress all communications to the author. Mr. Pearson is Education/Research ssociate with David Wastchak & Associates, Inc., Pharmaceutical Consul-ınts, 1818 Grand Avenue, Phoenix, Arizona 85007 (602) 253-9323.

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## Emotional Disorders

# What is Normal?

**Melvin Rockowitz, Ph.D.**

Very often, in the course of treating their patients, physicians become confronted with behavior that is the result of some physical or emotional stress. The task of determining the qualitative and quantitative nature of these behavioral manifestations sometimes is made difficult by personal feelings the particular physician has formulated about his (or her) patient over the sometimes extensively long term of their relationship. As a result, appropriate criteria for making such determinations gets somewhat confused. In addition, with such an obvious focus on pathology in the medical field, the question, "What is normal?" becomes more difficult to keep in mind, especially when it comes to the way a person behaves. I am going to list a group of 11 criteria which I feel help describe the 'normal' functioning individual. Many of the criteria are stated to help modify the focus and incorporate less pathological language. They are as follows:

1) **Sufficient feelings of security** – By this, I mean the feeling that one feels safe in contact with other people at work, play, and within the context of a family.

2) **Sufficient freedom of emotionality** – What is meant here is the ability of a person to form strong and lasting love and emotional connections to other people, the ability to express resentment without losing control, the ability to empathize with others, and the ability to laugh and enjoy oneself. We are all unhappy at times, but there should be valid reasons for this.

3) **Sufficient self-knowledge** – This includes the ability of someone to realistically appraise one's own assets and liabilities. Also included are realistic assessments of one's motives, goals, inhibitions, ambitions, defenses, motives, etc. The ability to be honest in one's own self-appraisal is based on the ability to accept oneself as natural without dismissing important desires even if they are socially unacceptable.

4) **Adequate self-evaluation** – By this is meant, sufficient self esteem, i.e., a realistic and honest assessment of one's individuality and achievements proportionate to an appropriate feeling of value. The absence of any severe guilt and a feeling of being morally sound while also recognizing some socially and personally unacceptable human desires

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without acting on them. Such desires are always a part of everyone at various times of their life.

5) **Effective contact with reality**—There are three aspects to this that incorporate the physical, the social, and the internal world. Representations of these three aspects include a broad and realistic outlook on the world with the ability to withstand life traumas, the ability to change if external circumstances cannot be modified, and an absence of excessive fantasy. This all could probably be subsumed under a heading of an adequate ability to cope with life as it unfolds in an inevitable way.

6) **Sufficient bodily desires and ability to gratify them**—This involves an acceptance of bodily functions but not a preoccupation with them; an ability to derive pleasure from the physical things in life; ability to gratify sexual needs without fear and guilt; ability to perform excretory functions without shame or conflict; an ability to work; and an absence of an excessive need to indulge in any of these activities and the ability to withstand a fair amount of deprivation.

7) **Ability to learn from experience**—By this is meant an ability to accumulate knowledge with elasticity and receptiveness, as well as, absence of rigidity in handling occupational tasks. Also, involved in this characteristic is the ability to learn spontaneously about one's own strength, dangers of certain situations, possibilities of success, and the transfer of this knowledge to new situations. Equally important is the resultant avoidance of methods that have previously failed.

8) **Realistic life goals**—Included in this are realistic, achievable goals commensurate with one's abilities. Also, a reasonable persistence of efforts to achieve them with the goals involving some good to society.

9) **Integration of personality**—This means a versatile, varied, interest in several activities with morals and conscience that are not too inflexible from the group's point of view. It involves an ability to concentrate and an absence of major conflicting trends within the personality. Also, it involves an ability to see the strengths and weaknesses of people without rejecting them.

10) **Ability to meet group standards**—A person must not be so unlike the other members of the group in ways important to the group. A person must be adequately informed and essentially accepting of the group folkways. Drives held taboo by the group must be inhibited willingly. One should also be interested in recreational activities preferred by the group.

11) **Sufficient freedom from the group**—This involves some originality, individuality, and an ability to consider some things good, others bad. Some independence from group opinions is necessary with an absence of an excessive need for flattery, reassurance, or group approval.

The accuracy with which these criteria can be used to determine the existence of psychopathology is undermined by the use of such words as 'sufficient,' 'adequate,' 'realistic,' 'appropriate,' 'ability,' and others which are obviously quite vague. However, such words are all that one has when attempting to describe 'normal' behavior. I do believe the criteria can be useful in providing a skeleton for such determinations if one uses it that way, i.e., as a skeletal structure of what the criteria should be if more definitive terminology were possible.

# Thinking

**William B. McGrath, M.D.**

(General Semantics and Scientific Method)

Cogito ergo sum: I think, therefore I am. Life as a hum
being (becoming?) is defined and determined by the abili
to think. But has anyone taught us how? Not one person
ten thousand has even heard of any basic guidelines
thinking.

We think with words, vocalizing subliminally or to
heard. Awake, we are incessantly talking to ourselves or
others, or listening. Language, my stone-age mistress,
necessary for the transmitting of knowledge from one
cality or generation to the next.

Yet language seems emaciated and inert. There is no w
that words can describe or contain the multidimensio
flux of reality. Reality, the ground of sanity, is ever changi
and wordless. For example, one might read instructions a
look at pictures of how to do an appendectomy. But this
infinitely far removed from the reality of operating; and t
surgery is silent. Events and experiences are mute.

**General Semantics**

1. Identification (the "is" of identity or equivalency)
always false. One event or individual is never identical
another. And a person does not remain quite the same
he moves from one time and place to another. You mig
dictate: "This is a sullen, uncommunicative patient," as
that were a fact, an objective observation. No; you left yo
self out of the equation. In some other circumstances a
with someone else he might be outgoing and friendly.

2. All-inclusive generalizations are false and sometim
cruel. (Antisemitic is antisemantic.) "The Japanese are
industrious people." "Mexicans are good to their familie
"I just love antiques." "Those psychiatrists are all crazy."

3. Either-or statements are always wrong. In reality the
are shades of gray and blue and red and green, and they a
ceaselessly changing in intensity and mix. "I cut my wr
because he would not tell me that he loves me." Can he
love and hate you at the same time or alternately or in
hundred different and changing ways?

4. A symbol (word-label) is not at all what it symboliz
It would be reasonable to say of a man, "He has been drin
ing too much." To document, "He is an alcoholic," is an u
demonstrable, unscientific proposition, and it omits all
other traits and functions and identities, while it complet
ignores his periods of sobriety. Most psychiatric and medi
terms are descriptive; i.e., multifaceted processes reduc
to script. How much more sensible (true to fact) it would
to report: "The cells of his pancreas are cancering," or "T
young man is schizophrening"; i.e., behaving in ways whi
we have agreed to call schizophrenic. To advertise, "We a
a progressive school" does not make it so. Titles are a gu
antee of little or nothing. In and of themselves words ha
no inherent meaning; only such as usage has assigned the

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He will not overcharge us because he is a Christian." The ocumenting of a policy is a long way from implementing it, ay after day in reality.

5. Language can convey only a wrinkled, mummified repesentation of a real event. Someone might describe a raft rip down the Colorado. The map he draws will omit millions f shifting details and necessarily neglect the constant hangings in the course and depth of the river. Language is kind of shorthand of demonstration. Only one's own exerience is real, not the memories or the photographs or iaries or accounts. People who have not learned reality esting will see nothing incongruous in crying at a movie.

**Scientific Method**

All around us are the marvels of technology. By more than oincidence they became possible with the relatively recent volution of science. Scientific method works very, very well!

Knowing this, are we not terribly foolish to franchise science only to technology? Scientific method can be just as fficacious when applied to education, politics and the humanities and to all the problems of everyday living. A proven ystem is surely better than our random groping.

The scientist learns to think somewhat as follows:

1. He apprehends a need (e.g., the prevention of polio).
2. Guided in part by extant knowledge and experience he begins to gather relevant data.
3. He considers a very tentative hypothesis, viz., a set f assumptions or suppositions which might encompass his data.
4. His further fact collection is accordingly more selecive and better organized.
5. He is ready to formulate a theory; i.e., predictions to be derived from his assumptions.
6. He continues to search for facts or exceptions which might invalidate his theory. (Better to find one's self in error than later be made to appear foolish.)
7. Giving credit to earlier or contemporary contributors, he publishes his theory, with the facts on which it is based and with his predictions.
8. His publication is an open invitation to other scienists to replicate his experiments and either substantiate or ail to demonstrate his predictions.
9. If validated, he puts his theory into practice. It has raduated from its status as theory into useful knowledge.
10. He accepts the inevitability that his theory will be upplanted by newer data and further knowledge.

A scientist, qua scientist, must abide by the fundamental and uncompromising ethics of scientific method.

1. He must beware of preconceived notions (and unonscious wishes) which might distort his selecting and nterpreting of data.
2. He must, of course, be totally honest, because othervise he will have ostracized himself.
3. He must take for granted the principle that nothing hould foreclose the further expansion of knowledge, and o he must be resigned to the repudiation of his own most herished theories.
4. He must realize that nothing in reality is absolute and unchanging; hence knowledge will continue to be tenative and incomplete.
5. He must be especially mindful when he is projecting; e.g., when he posits any one-directional illusion of causeffect (points the finger of blame) instead of reciprocal reationships.
6. He must employ that basic logic which we call grammar; e.g., keep clear the crucial distinction between structures (nouns) and functions (our old friends, the gerunds.) Something *has* a structure and *performs* a function. The relationship of digestion to stomach is analogous to the worrisome but non-existent mental-physical dichotomy: Mind is the function of body; soul is its purpose.
7. He is glad to forego "the courage of his convictions" since such would imply prejudices and a narrow mind.
8. He is comfortable with probabilities and uncertainty, willing always to question his own assumptions and to challenge those of self-proclaimed authorities.

We have sketched an amateur blueprint of general semantics and scientific method. (The editorial "we" gives credit to all the writings which are not catalogued in my failing memory.) Our purpose is twofold.

The endless chatter of most psychotherapies has come to seem superficial and inane. There is inordinate emphasis on talking, and most of it is about "our feelings." Any recounting of experience is a million times shrunken from the experience itself. Crippling traumata and deprivations may have occurred long before we had language with which to record and remember them. Our reactions then will forever be wordless, to be expressed only in weeping or snarling or in the preverbal communication of psychosomatic disease. Such emotions as grief, terror, resentment or regret simply cannot be squeezed into thin strings of wording.

Talking about pent-up feelings is not a very effective method of ventilating them. Neither is hitting the door or a blameless little ball which does not even remotely resemble (symbolize) the original object of your wrath.

Back to semantics: The expression of deeper levels of feeling corresponds more closely with laughing or weeping or with primitive activities like chanting and marching—anything with cadence and old associations. Leaders have intuitively recognized this proposition and put it into practice. To verbalize (note the verb) that you feel joy is by no means equivalent to jumping up and down. The patriarch would rend his garments when he could not accept the role (victim or villain) he was coerced into playing. The folk who share fundamentalist religious services come away feeling purged, feeling good. Why? Because they have joined heartily in singing the old familiar hymns, releasing tensions, replacing them with feelings of benevolence.

Emotions have four interrelating sources: Neuroendocrine arousal from within; environmental or interpersonal stimulation; conscious and unconscious associations to previous experience; and lastly, the way in which the person is thinking. Of these the most operational and surely the most neglected is the thinking. As one thinks one feels.

Sanity is measured by the accuracy with which the individual perceives himself, in his situation, wearing the costumes of his various relationships. Sanity is his reacting to words and slogans and other symbols without ever forgetting that they are only symbols. Let him pause to reflect on this!

People can be taught how to think. They can learn methods of appraising mute reality and reacting (feelings and behavior) without the omissions and distortions which we call mental illness.

When a person knows how to take a matter into consideration, he will become considerate. Simply by learning how to think, people can evolve into rational human beings (becomings).

## *Seminars in Gastroenterology and Liver Disease*

# Rational Role of Upper Gastrointestinal Endoscopy

**Leon A. Rigberg, M.D.**

**Leon Rigberg, M.D.**
**Stephen Glouberman, M.D.**
**George Burdick, M.D., Editors**

The era of fiberoptic endoscopy was born in 1958. Since that time there have been refinements in upper gastrointestinal fiberoptic instruments such that the instruments can now be advanced as far as the second or third portion of the duodenum and canulation of the common and pancreatic duct through the ampulla vater can be accomplished. The new instruments have provided more rapid and accurate diagnosis, have increased our capability of treating upper intestinal bleeding with electro- and even laser beam coagulation, and have enabled us to remove foreign objects and polyps from the esophagus, stomach and duodenum.

The major indication for upper intestinal fiberoptic examination occurs in persons having gastrointestinal bleeding, unless the bleeding is so severe and life-threatening that any diagnostic technique short of surgery would decrease the patient's chance of recovery. Multiple endoscopy studies ha demonstrated that between 30% to 50% of upper gastroi testinal bleeding is due gastric erosion, a common patholo cal finding on endoscopy and extremely difficult to diagn on radiographic studies alone.(1, 2) Because of endoscopy, high association of secondary lesions has been documente For example, esophageal varices in association with du denal ulcers, gastric ulcers in association with duoden ulcers, esophageal varices associated with gastric erosio and gastritis and duodenitis in association with chro scarring of the duodenum and/or antral deformities ha been found.(2) The use of endoscopy to evaluate upper ga trointestinal bleeding has improved the management patients and has dictated further therapy, i.e., more inte sive medical treatment or emergent surgical intervention.

Another indication for upperintestinal fiberoptic examin tion is when conventional barium studies fail to reveal cause of persistent epigastric pain. Patients with persiste abdominal complaints suggestive of ulcer disease but n documented on upper gastrointestinal radiographs ha been studied by several investigators and from 6% to 20 have been found to have actual lesions.(3) At present, upp gastrointestinal barium studies still should be the first ste in evaluating patients with abdominal distress but if th complaints are persistent, then endoscopic evaluation shou be contemplated.

The role of endoscopy in the management of patients wit established duodenal ulcers is straightforward.(4) When a dominal pain suggestive of duodenal ulcer is present a barium studies demonstrate a duodenal ulcer, endoscopy *not* generally indicated. However, if after good medic management, the patient continues having abdominal co plaints, further evaluation of the intestinal tract by end scopy may be warranted. In addition, one of the mo common findings on x-ray in a person with "peptic disease" duodenal spasm and irritability and enlarged gastrointe tinal folds. Under these circumstances, endoscopy is ind cated to look for an underlying duodenal ulcer or oth inflammatory changes.

Other indications for endoscopy include the investigatio of foreign objects, in evaluating possible gastric outlet o struction *prior* to barium studies in order to diagnose tum by biopsy, chronic stricture by visualization or pyloric edem for which further nasogastric intubation and negative su tion is the treatment of choice.

It is thought by some that before surgery is planned an performed on individuals with duodenal ulcer disease, end scopy should be performed to demonstrate the possible exi tence of an active ulcer, to eliminate the possibility co-existent pathology, such as bile gastritis, bile esophagiti gastric ulcers, gastric polyps, and possible aberrant patho ogy of the pancreas within the lower portion of the stoma or duodenum.

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From: 1201 S. 7th Ave., Phoenix, AZ 85007.

In patients with established gastric ulcers, endoscopy ould be undertaken with at least six biopsies obtained from e rim of the gastric ulcer as well as cytology from the ulcer rater itself. A recent Veterans Administration study has emonstrated that there is at least a 3% chance of a radiogically benign appearing gastric ulcer being malignant.

Additional indications for endoscopy include patients who ve had partial gastrectomies. In this situation barium ntrast studies are difficult to interpret and marginal ulcers, rcinoma of the anastimosis and bile gastritis are oftenmes missed. Tumors of the stomach as seen on x-ray can be rther evaluated by gastroscopy and can provide a definitive agnosis without the need for exploratory laparotomy.

The incidence of perforation following upper gastrointesnal endoscopy is between 0.03% to 0.04%. The incidence of ortality is even less at 0.019%. As with all procedures creased frequency of use leads to greater proficiency which creases the above complications. In light of surgical mordity and mortality these numbers are extremely low. Ineased flexibility of the newer upper gastrointestinal inruments has made almost all areas of the stomach accessle to visualization. Active peristalsis can be seen from the ophagus to the duodenum, and the mucosal appearance in e esophagus to the duodenal areas can also be evaluated. valuation of esophageal varices, esophageal rings, hiatal rnias, enlargement and irregular folds within the fundus d the body of the stomach can all be visualized and preciated with gastroscopy. With the use of the new diatric gastroscope it's possible to avoid the use of sedaves and narcotics in individuals with chronic lungs disease, rdiac disease and other debilitating states where preously these type studies were extremely difficult to perrm.

In summary, then, upper gastrointestinal endoscopy is dicated in patients who are having upper gastrointestinal eeding to further define the source of the hemorrhage. dditional indications for endoscopy include the symptomac patient with negative upper gastrointestinal barium udies who has persistent pain, the management of patients ith established duodenal and gastric ulcer disease and to aluate other types of pathology within the upper gastroinstinal tract which ordinarily would require exploratory parotomy. With increasing use of this procedure refineent in technique and increase in yield will no doubt acue.

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*Infectious Disease*

# Snake Venom Poisoning in Arizona

Findlay E. Russell, M.D., Ph.D.
Albert L. Picchioni, Ph.D.

**With summer here, a reminder of the problems encountered in snake bite is timely. While it is true that more people die of bee stings in this country than snake bite, a seriously envenomized patient can be a great worry and challenge. A fatal outcome is uncommon; serious disability and deformity of the bitten extremity is not. There is disagreement between Dr. Russell and Dr. Glass concerning the value of steroids in systemic detoxification. It is most important to remember that (in our experience at least) 40% of people bitten by rattlesnakes are not envenomized to any serious degree, and that in some instances, horse serum can kill more quickly than can snake venom. 637 cases cited here is most impressive. It would have taken us 100 years to accumulate an equivalent experience.**

Bites by venomous snakes in Arizona appear to be more common than has been generally suspected. Preliminary inquiries would indicate that between 50-100 bites by rattlesnakes occur in the state each year. Bites by the Arizona coral snake (*Micruroides euryxanthus*) are rare.[1] Deaths from rattlesnake venom poisoning for recent years are as follows:

1967 - 0  1969 - 1  1971 - 1  1973 - 0  1975 - 0
1968 - 2  1970 - 0  1972 - 0  1974 - 1  1976 - 0

Descriptions of the snakes of Arizona have been published by Van Denburgh,[2] Gloyd,[3] Klauber,[4] Fowlie,[5] Stebbins,[6] Conant,[7] and Shaw and Campbell.[8] The chemistry of rattlesnake venoms has been reviewed by Jimenez-Porras,[9] Minton[10] and Russell and Brodie,[11] and the pharmacological properties of rattlesnake venom have been noted by Russell.[12] The clinical problem of snake venom poisoning in Arizona has been discussed by Shannon,[13] Limbacher and Lowe[14] and Russell,[15] among others.

The distribution of the venomous snakes of Arizona are shown in the maps in Figures 1a and 1b. The reader is referred to Klauber[4] for a more definitive discussion of exact boundaries and overlapping of species.

It is not possible within this short review to discuss the various forms of therapy that have been advised for snake venom poisoning in Arizona. The following protocol is based on experiences with 637 cases of snake venom poisoning and considerable experimental study in animals. It has been reduced to a concise form for emergency room purposes. Literature dealing with the rationale for the various measures has been presented elsewhere.[16-21]

To be effective, treatment must be instituted immediately. The method of grading rattlesnake bites by numbers on the basis of selected symptoms and signs is inadequate. Every finding should be considered in determining the severity of the poisoning. For that reason, poisoning should be noted as minimal, moderate or severe, bearing in mind *all* clinical manifestations, including changes in the blood cells and blood chemistry, deficiencies in neuromuscular transmission, changes in motor and sensory function, and the like.

## Management of Snake Venom Poisoning

**I. First Aid Measures**

A. Constriction Band, Incisions and Suction

1. If patient is seen within 30 minutes of bite, and there is evidence of envenomation, place constriction band 5-10 cm proximal or above first joint proximal to bite. Band should be tight enough to occlude lymph flow but not to impede venous or arterial circulation.
2. Incise through fang marks. Incision should be no more than 1 cm long and no deeper than 3 mm. They are of no value if delayed more than 30 minutes.
3. Apply suction.
4. Do not make cuts anywhere except through fang marks.

B. Immobilization and Rest

1. Immobilize affected part and place at heart level, in a physiological position.
2. Keep patient at rest and give reassurance.
3. Under no conditions should the part be placed in ice, the bite area excised or surgical measure performed unless approved by the Admitting Room Director in hospital.

**II. Medical Treatment**

A. Antivenin

1. Test for serum sensitivity by means of conjunctiva or skin test (see antivenin brochure) sensitivity test is positive, get consultati before administering antivenin.
2. Antivenin (*Crotalidae*) Polyvalent (produced Wyeth Laboratories) is the antitoxin of cho in all North American crotalid bites.* Adm ister antivenin intravenously in continuo saline drip, if possible, and in all cases of sho 3-20 vials of antivenin may be necessary du ing the first 6 hours.
3. If it is necessary to administer antivenin i.m give in buttocks. Do not inject antivenin i.m. it can be given i.v.
4. Never inject antivenin into a toe or finger.
5. Measure circumference of extremity 10-20 proximal to bite and at a second point proxim to that every 15 minutes, as one guide antivenin administration.
6. Have available the following items: tourniqu oxygen, Adrenalin, antishock drugs, trache tomy equipment and positive-pressure breat ing apparatus.

B. Supportive Measures

1. Administer broad-spectrum antimicrobi agent if there is severe tissue involvement.
2. Administer appropriate antitetanus agent (a titoxin/toxoid).
3. Administer plasma, albumin, whole blood, platelets, as indicated.
4. Aspirin or codeine may be given for pain.
5. Limit administration of i.v. fluids during peri of acute edema.
6. Mild sedation may be indicated in all seve bites and when respiratory depression is not problem.
7. Give liquid or soft diet, if tolerated.
8. Maintain patient airway.
9. Administer oxygen or apply positive pressu breathing as needed.
10. Splint injured extremity in loose cast in phy siological position at heart level.
11. Antihistamines or corticosteroids may be ad ministered to treat allergic reactions to ant venin or venom. Do not use corticosteroid during acute phase of poisoning except fo shock or severe allergic reaction.

C. Follow-up Care

1. Cleanse and cover wound with sterile dress ing.
2. Debridement should be performed, if necessary on third to tenth day. Elevate slightly afte fourth day.
3. Soak part for at least 15 minutes 3 times daily in 1:20 Aluminum Acetate Solution, U.S.P (Burow's Solution). Bubble oxygen through so lution at least once a day.

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*North American Coral Snake Antivenin (*Antivenin micrurus fulvius*) is commercially available from Wyeth Laboratories.

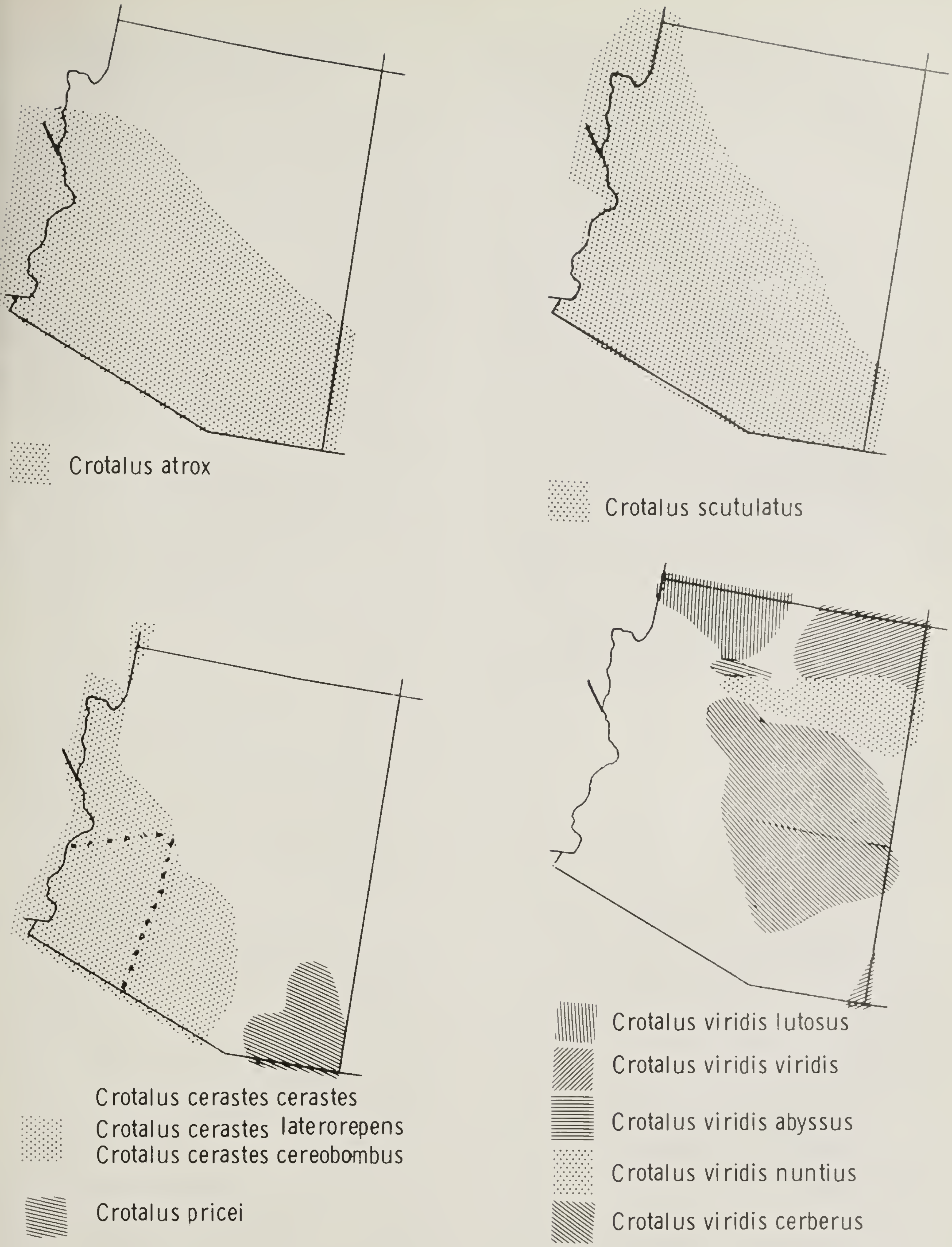

Figure 1a. Geographical Distribution of Venomous Snakes in Arizona

4. Paint wound once daily following debridement with an aqueous dye solution containing brilliant green 1:400, gentian violet 1:400, and acriflavine 1:1,000. Apply antimicrobial cream at bedtime.
5. Evaluate need for physical therapy on third or fourth day; begin active exercise immediately.

On admission to the hospital the following tests should be carried out immediately: typing and cross-matching, bleeding, clotting, and clot retraction times; complete blood cell count; hematocrit determination; platelet count; and urinalysis. Red blood cell indices, sedimentation rate, prothrombin time, arterial blood gas measurements, and determinations of sodium, potassium and chloride may be needed. In severe poisonings, an electrocardiogram is indicated. Serum protein levels, fibrinogen titer, partial thromboplastin time, and renal function tests are often useful. In severe envenomation the hematocrit, blood count, hemoglobin concentration, and platelet count should be carried out several times for the first few days, and all urine samples should be examined, particulary for red blood cells.

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**NOTICE**

To obtain toxicological information on poisons at an time, contact the Arizona Health Sciences Cente University of Arizona, Tucson, telephone number (60 882-6300. One of the above professional staff membe in the Arizona poisoning Control Information Cente will provide consultation service.

## STATISTICS OF HUMAN INGESTIONS OF POTENTIAL POISONS REPORTED IN ARIZONA DURING JANUARY-DECEMBER 1976

| AGE: | NUMBER | PERCENT |
|---|---|---|
| Involved under 5 year age group | 1025 | 41.8 |
| Involved 6 to 15 year age group | 141 | 5.7 |
| Involved 16 to 30 year age group | 554 | 22.6 |
| Involved 31 to 45 year age group | 234 | 9.5 |
| Involved over 45 year age group | 175 | 7.1 |
| Age not reported | 327 | 13.3 |
| NATURE OF INCIDENT: | | |
| Accidental | 1285 | 52.3 |
| Self-poisoning | 752 | 30.6 |
| Unknown | 419 | 17.1 |
| OUTCOME: | | |
| Recovery | 2242 | 91.3 |
| Fatal | 214 | 8.7 |

### CAUSATIVE AGENTS

| **Internal Medicine** | **Number** | **Percent** |
|---|---|---|
| Aspirin | 128 | 4.3 |
| Other Analgesic | 401 | 13.5 |
| Barbiturate | 123 | 4.2 |
| Antihistamine | 73 | 2.5 |
| Laxative | 19 | .6 |
| Cough Medicine | 34 | 1.2 |
| Tranquilizer | 448 | 15.2 |
| Others | 471 | 15.9 |
| Subtotal | 1697 | 57.4 |
| **External Medicine** | | |
| Liniment | 32 | 1.1 |
| Antiseptic | 50 | 1.7 |
| Others | 28 | .9 |
| Subtotal | 110 | 3.7 |
| **Household Preparation** | | |
| Soaps, Detergents, etc. | 74 | 2.5 |
| Disinfectants | 33 | 1.1 |
| Bleach | 41 | 1.4 |
| Lye, Corrosives, Drain Cleaners | 8 | .3 |
| Furniture & Floor Polish | 21 | .7 |
| Subtotal | 177 | 6.0 |
| **Petroleum Distillate** | | |
| Kerosene | 12 | .4 |
| Gasoline | 35 | 1.2 |
| Others | 37 | 1.3 |
| Subtotal | 84 | 2.9 |
| **Cosmetics** | 129 | 4.4 |
| **Pesticides** | | |
| Insecticides | 88 | 3.0 |
| Rodenticides | 13 | .4 |
| Herbicides | 5 | .2 |
| Subtotal | 106 | 3.6 |
| **Paints, Varnishes, etc.** | 43 | 1.5 |
| **Plants** | 147 | 4.8 |
| **Miscellaneous** | 373 | 12.6 |
| **Unspecified** | 90 | 3.1 |
| TOTAL | 2956* | 100.0% |

*Some victims ingested more than one potential po son.

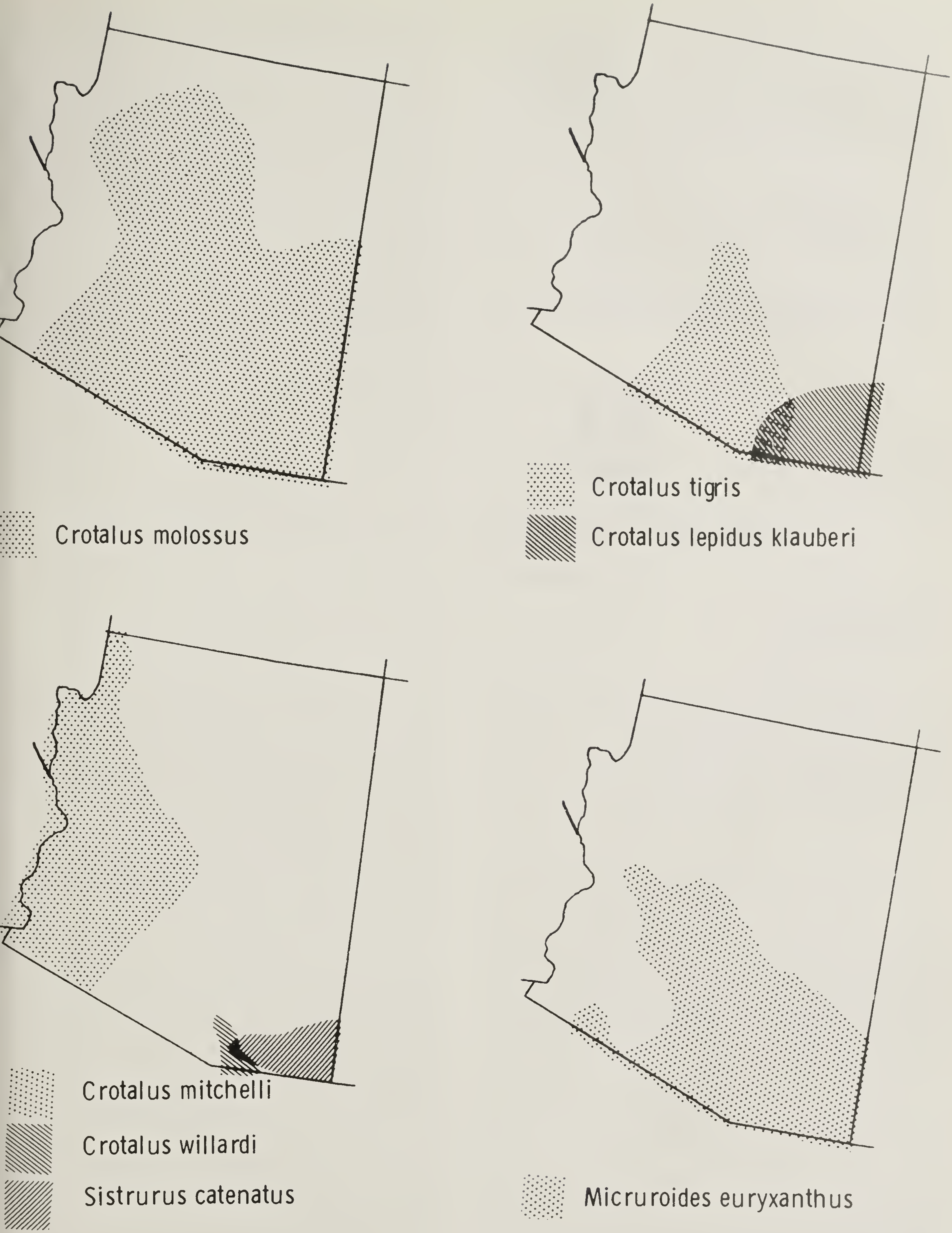

Figure 1b. Geographical Distribution of Venomous Snakes in Arizona

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## *Neurology*

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**Barry Hendin, M.D.**
**Lawrence Z. Stern, M.D.**

# The Remote Effects of Cancer on the Nervous System: Cerebellar Degeneration

**Barry A. Hendin, M.D.**

In 1965 Lord Brain wrote: "It is strange that it has taken so long to recognize the remote effects of neoplasms. There is nothing new about neoplasms, and we know now that many of these complications are by no means uncommon. Therefore, in the past they must have occurred in very large numbers without being recognized. The failure to note them hitherto has been a remarkable scotoma in medicine and surgery."

Although there were reports in the German literature of the nineteenth century concerning the remote effects of neoplasms on the nervous system, modern interest in this topic is generally dated to 1948 when Denny-Brown described two patients with carcinoma of the lung and an associated sensory neuropathy. Since that time papers have been written describing involvement of every level of the nervous system in the remote effects of cancer; including involvement of peripheral nerves (both motor and sensory), spinal dorsal and ventral roots, spinal cord, brain stem, cerebellum and cerebral cortex.

The number and range of these disorders is so great that rather than discussing each of them briefly, I will concentrate on a single entity: the cerebellar degeneration which is seen as a remote effect of cancer.

The first case of carcinomatous cerebellar degeneration was described by Brouwer in 1919. It wasn't until 1938, however, that he suggested a causal relationship between cancer and cerebellar degeneration. In 1951 Brain, Daniel and Greenfield brought into clearer focus the role of neoplasm in this rare disorder.

The clinical picture is still the same as described by Lo Brain years ago: "There are few more striking clinica pictures than that of a patient who hitherto, apparently i normal health, becomes unsteady in his gait and then in h upper limbs with slurring of his speech and then, within few months, is unable to walk, feed himself or to spea intelligibly." The most prominent symptoms are ataxic ga and limb incoordination. By contrast nystagmus is ofte minimal or absent. There are often signs of clinical involv ment of other levels of the nervous system: muscular weal ness, sensory deficits, reflex alterations and intellectua changes are common.

The syndrome is most frequently associated with lung ovarian cancers, but has been seen in association with man types of neoplasms. The cerebellar symptoms have appeare before the discovery of the neoplasm in more than half th reported cases. This has emphasized the necessity of lookin carefully for a neoplasm when one has an otherwise u explained subacute cerebellar degeneration. The course the disease has been very rapid, and in one case a flori cerebellar syndrome was reported to have appeared "ove night." Although a single case has been described in whic improvement and stabilization occurred after treatment the patient's cancer, this has not been the general rul Death has usually occurred within one year of the onset cerebellar symptoms.

Most standard diagnostic tests have been nonspecifi EEG's have often been normal but have occasionally show focal or diffuse slowing. Skull x-rays have been normal. C Scans have been useful primarily in excluding metastati disease. Cerebrospinal fluid has generally been normal, bu

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From: 926 E. McDowell Rd., Phoenix, AZ 85006.

s occasionally shown increased cells, protein or globu- is.

The most striking pathologic feature has been the loss of rkinje cells throughout the cerebellum; in some cases no rkinje cells were seen. In addition to Purkinje cell loss, ere has also been degeneration of long tracts of the spinal rd and degeneration of brain stem structures. Lymphocytic filtration of the meninges and perivascular spaces has been prominent feature in many of the cases. It is believed by me that this lymphocytic infiltrate may relate to a prior ral infection. Others contend that this is merely a reaction tissue damage, with no specific etiologic significance.

Pathologic similarities to kuru and scrapie have led to eculation about a possible viral etiology. One theory is that ere could be a persisting and tolerated viral infection (due deficits in the immune system) which has caused minor ll damage in the cerebellum and a consequent leak of rebellar antigens. This, in turn, could cause lymphocytic nes to proliferate which could produce antibodies and rther cell destruction which would lead to further cerebel- r antigen formation.

Although recent work has entablished the existence of tibodies to Purkinje cells in a case of cerebellar degenera- n (in association with Hodgkin's disease), it is not yet clear at these antibodies were the cause of the cerebellar degen- ation and not merely the effect.

Despite recent enthusiasm concerning the subject of the mote effects of cancer on the nervous system, a word of ution is in order. If at one time the diagnosis of a remote ect of cancer was made to little (or not at all), the time has obably come when the diagnosis is being made too often, parting an air of hopelessness to otherwise remediable uations (such as nutritional deficiency and metastasis). An teresting paper challenging the pervasiveness of these mote effects was published by Elliott Wilmer and Jacob ody. The aim of their study was to determine if neurologic gns associated with lung cancer appeared as frequently in a ntrol population with other chronic lung diseases. They mpared the two groups in the categories of dementia, sarthria, incoordination, sensory impairment, alteration reflexes, muscular weakness and atrophy. Surprisingly ere was not a significant increase in any of these symptoms the group with cancer. The question thus arises as to hether we are not frequently seeing the remote effects of rious chronic illness, as opposed to the specific remote fects of cancer.

There are certain remote effects of cancer that have either stinctive pathologic or clinical features, such as progressive ultifocal leukoencephalopathy, subacute cerebellar degen- ation, limbic encephalitis, sensory neuropathy and the aton-Lambert syndrome. Their association with cancer nnot be legitimately doubted at this time. It is only the tempt to place the blame for a wide range of nonspecific eurologic symptoms on a vague remote effect which should questioned.

Better understanding of the remote effects of cancer, erefore, requires not only a knowledge of what these mote effects are, but also what they are not; and better nderstanding is by no means a clinical irrelevance. When e remote effect is discovered first, it can alert the physician the possibility of a neoplasm, allowing for earlier diag- osis. When the remote effect is found after the neoplasm, d its significance understood, it can result in better and ore rational management of the patient.

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liography available on request.

*Obstetrics*
*and Gynecology*

# The Onset of Labor Part II

**Thomas Kirschbaum, M.D.**

**Donald J. Ziehm, M.D., Editor**

## Placenta

The rupture of decidual cells and cells of the amnion results in the liberation of lysosomes. Lysosomes are simply packages of enzymes which are aggregated in decidual cells throughout pregnancy. Just prior to the onset of labor, apparently in the human as well as animals, increase in estrogen concentration causes decidual cell disruption with liberation of their enzyme content. The principal enzyme, with respect to labor, is hydrolases, specifically phospholipase $A_2$, which operates on phosphoglyceryl lipid aggregates. The common phosphoglyceryl lipid in amniotic and chorion has palmitic, arachodonic and phosphoric acid. As a result of the action of phospholipase $A_2$ arachodonic acid is liberated. The $A_1$ enzyme liberates palmitate, an important precursor for surfactant. It appears that these phosphoglyceryl combinations are stored in the amniotic fluid and chorion and produced in gradually increasing concentrations until they are needed in late pregnancy. Then segments of the enzymatic machinery dismantle them, providing palmitate to produce surface active material, and arachodonic acid to produce Prostaglandin, specifically $F2_a$. Arachodonic acid is the principal precursor for Prostaglandin $F2_a$, whose role is to further sensitize the uterus. Again, progesterone in high concentration (200 mg/day) will inhibit the production of phospholipase $A_2$, thereby decreasing the production of Prostaglandin. This phase has good correlation with human experience. The presence of lysosomes, elevated phospholipase $A_2$, increased concentration of arachodonic acid in its free form in amniotic fluid and in placental membrane prior to the onset of labor have all been demonstrated in humans. Labor can be induced by injecting arachodonic acid at approximately term in the human. An increase in Prostaglandin $F2_a$ may also appear in the human prior to onset of labor; it certainly increases after labor has begun. Phospholipase $A_2$, the material responsible for

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Presented to Phoenix OB-Gyn Society March 24, 1977. Reprint requests to Dr. Ziehm, 1728 W. Glendale Ave., Phoenix, AZ 85021.

the production of Prostaglandin and ultimately the initiation of labor, is found predominantly in the human decidua and amnion, less in the chorion and myometrium. The principal sources of precursor of the phosphoglyceryl lipids are the amnion and chorion. Amniotic tissue, that thin almost transparent membrane is enormously metabolically active, having a high rate of oxygen consumption per unit weight. It is an important source of biochemical products in this process.

**Uterus**

Prostaglandin increases uterine irritability. Smooth muscle contracts by virtue of complexing actin and myosin to protein aggregates with calcium. The presence of calcium is essential. Free calcium is in equilibrium with calcium bound inside cytoplasmic reticulum. It enters or leaves the cell from an extracellular position as well. This action is governed by oxytocin which releases the calcium bound within intracellular sites so that it can be available for use in enhancing the contractile activity of the uterus. Prostaglandin is responsible for transferring calcium into intracellular sites so it can contribute to the irritability of the uterus and its general contractile properties. In early pregnancy oxytocin is relatively useless in stimulating uterine contractions because there simply isn't enough intracellular calcium present on which it can act. Prostaglandin pulls calcium into the cell and thereby allows the uterus to become contractile. Thus Prostaglandin can be used to stimulate the uterus in early pregnancy. Prostaglandin causes the movement of calcium into intracellular sites and raises the contractile activity of the uterus to the point it can respond to oxytocin. Oxytocin appears to be a relatively passive member of the whole system. Prostaglandin has the key role in triggering the onset of labor in the hum as well as experimental animal.

Once the uterus begins to contract it begins produce Prostaglandin and other hormones of own—Prostaglandin E1, $E2_a$ (which appears to responsible for the cervical softening and ripening th takes place in early labor), and more $F2_a$. At this poi the progesterone block is gone. Once the uterus h been stimulated to contract by virtue of increas Prostaglandin activity, and to produce Prostagland of its own, the administration of progesterone in lar doses has no effect. This appears to reconcile so clinical observations: administration of progestero to a patient in threatened premature labor may or m not stop the contractions. Its effectiveness in int rupting the onset of labor appears to be a function whether the reaction is at the placental or uteri phase. That explains the finding of Johnson fro John's Hopkins—long acting progesterone was eff tive in inhibiting the onset of labor. Apparently he w selecting patients early enough in labor so that he w attacking, and thereby inhibiting the production Prostaglandin prior to spontaneous uterine activity

**Summary**

Although there are two avenues leading to the ons of labor, the terminal sequences appear to be the sam The placenta, previously thought to be passive, h some real function. In some animals the placenta tak part in the enzymatic conversion of substrate to Pr taglandin and fetal cortisol production is important. others (human, horse, pig) those initial phases a probably genetic; at least that is Liggins' viewpoi Something occurs in the biochemistry of the huma which is independent of cortisol production by the fet and triggers the onset of labor.

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### The Loco Weed

So you're gonna smoke a reefer, my lad
I beg of you DON'T, it will drive you
mad!
Yes, I tried it once, and I did not find
The pleasure I sought—but it blew my
mind!

I was in torment and consumed with
dread,
Because jumbled thoughts kept
pounding my head!
'Twas a taste of Hell, believe me, my
friend,
And I cried, "When, WHEN, will this
nightmare end?"

Oh, from the rooftops I would shout, ya
lug,
That pot's a potent, mind-torturing
drug!
Now if my advice you should fail to
heed,
You'll know why pot's known as the
loco weed!

Harry Epstein

## *Oncology*

# HE DIAGNOSIS OF NECK MASSES

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tephen E. Jones, M.D.
oberty H. Thoeny, M.D.
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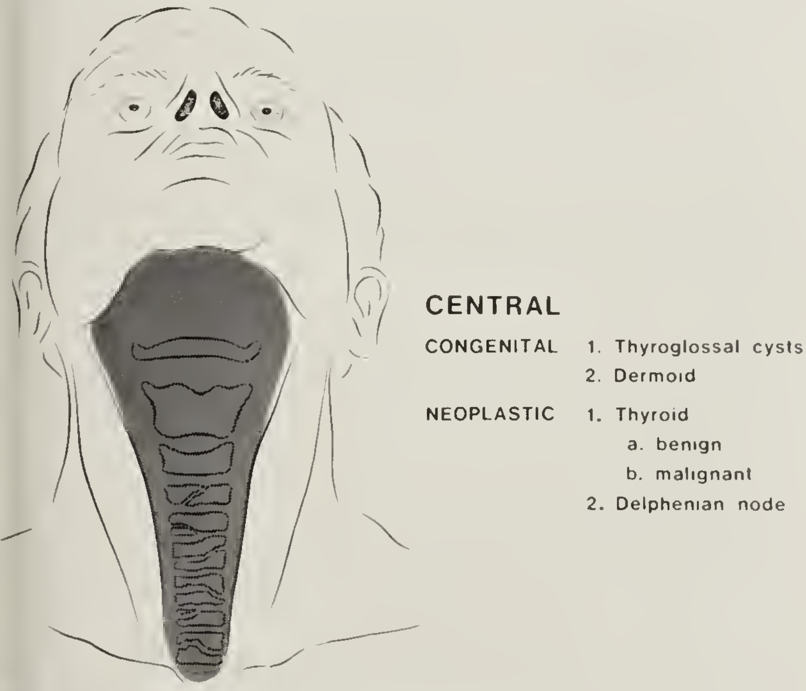
A lump in the neck is a frequent presenting comlaint. It is an interesting and important condition ecause of the many different anatomical structures hich occupy this small area and because the first octor who sees the patient must be aware of certain asic principles to make an accurate assessment and decide on the proper course of action for the patient. The main concern is to differentiate those lumps which by history or observation have been present for a period of weeks and suggest the presence of cancer. The rule of 80 is a helpful pneumonic in considering neck masses. By location, certain conclusions can be reached.



igure 1. Central anatomic region and the more common diagnoses ssociated with masses occurring in this region.

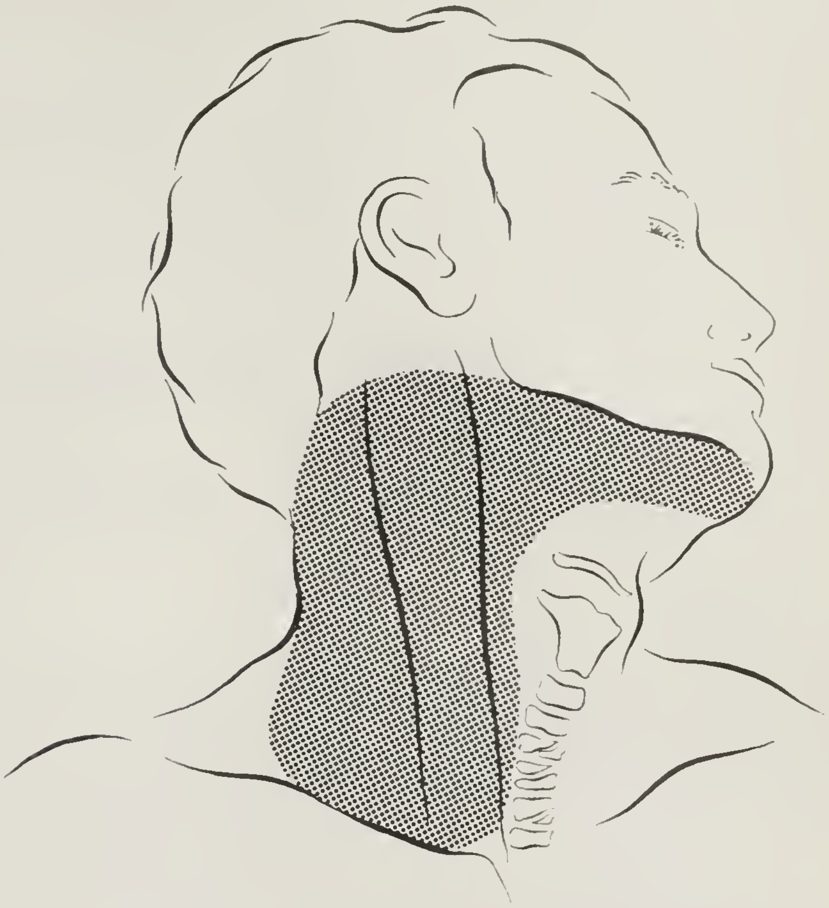


**Figure 2.** Lateral anatomic region. The "rule of 80" applies and a search for an occult head and neck primary should be undertaken prior to biopsy.

### Central Lesions

This is the area between the sternomastoid muscles but excluding the submaxillary region (Figure 1). In the upper area, congenital lesions such as thyroglossal or dermoid cysts should be considered. In the lower area, thyroid lesions are the most common. Thorough medical evaluation of the latter lesions should be undertaken prior to biopsy.

### Lateral Lesions

In the area between the sternocleidomastoids and the trapezius plus the submaxillary areas (Figure 2), the "Rule of 80" (80% neoplastic, 80% metastatic, 80% from tumors above clavicle) should be considered and early biopsy should be deferred unless lymphoma is suspected. A careful search for the primary cancer including endoscopy and blind biopsy of the nasopharynx, tonsil, and base of the tongue is necessary before biopsy of the neck. If no primary can be found, biopsy with frozen section examination should be done with the capability to proceed with a radical neck dissection at the same procedure.

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om: 926 E. McDowell Rd., Phoenix, AZ 85006 (Dr. Munhall), 110 E. McDowell l., Phoenix, AZ 85006 (Dr. de Freitas).

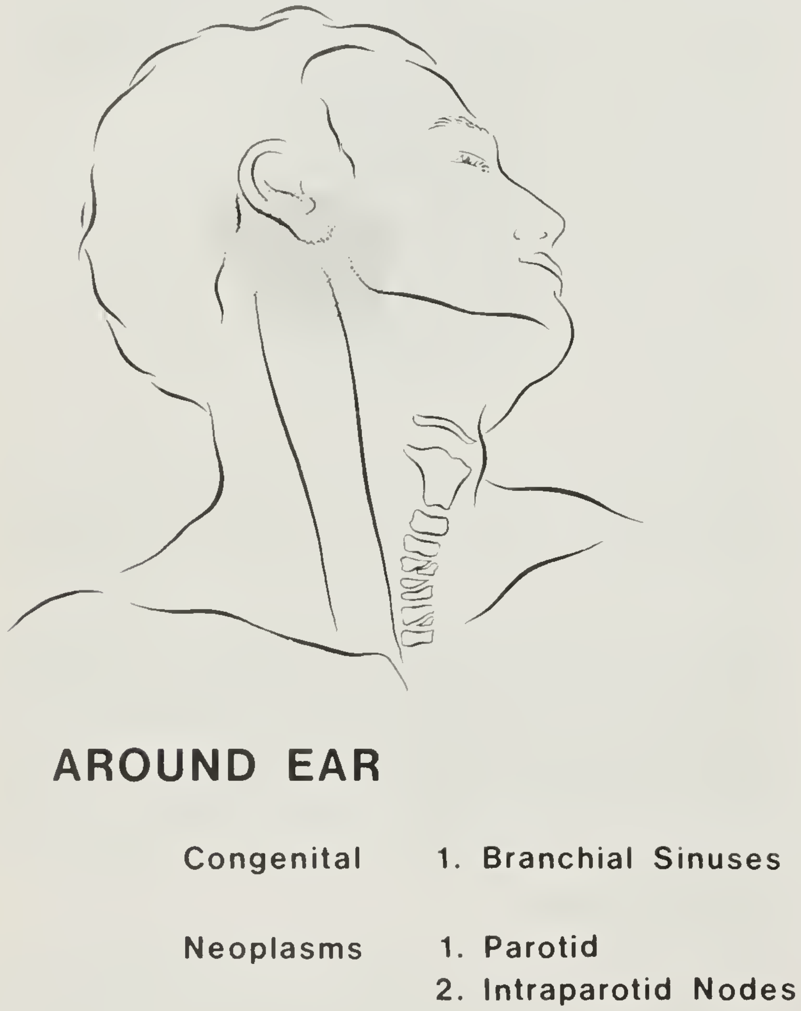

**Figure 3.** Anatomic region around ear and the more common diagnoses associated with masses occurring in this region.

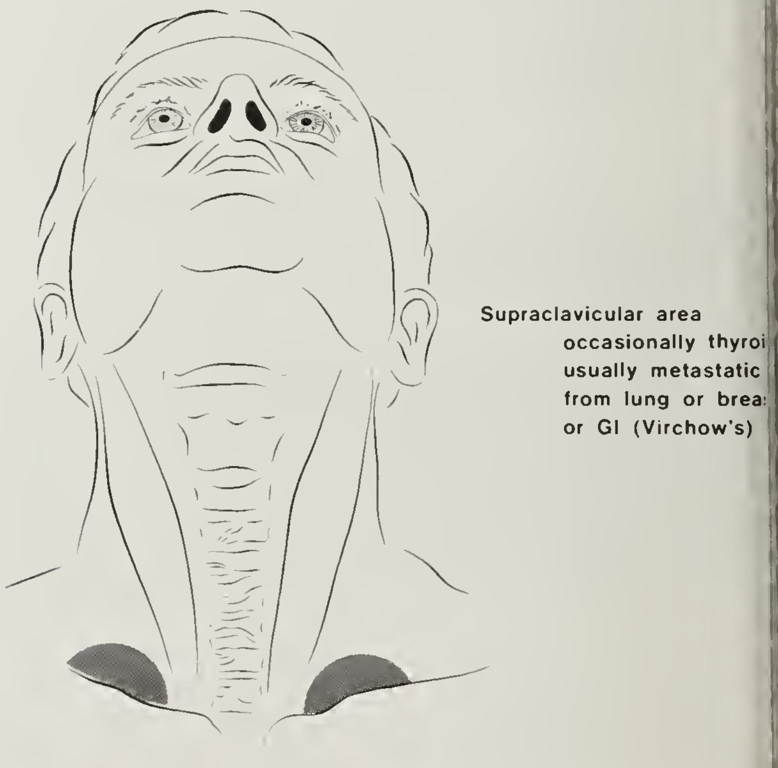

**Figure 4.** Supraclavicular region and the more common diagnose associated with masses occurring in this region. In addition, lym phoma should also be considered with this type of presentation.

**Lesions Around the Ear**

This area suggests parotid tumor (Figure 3). The proper biopsy procedure for these masses is superficial lobectomy with dissection of the facial nerve.

**Supraclavicular Lesions**

This area (Figure 4) is discussed separately because lesions in this location are not usually metastases from head and neck primaries but rather metastases from primaries below the clavicle (lung, pancreas, etc.) or lymphoma and indicates the need for early biopsy.

**Conclusions**

1) Central lesions are frequently congenital and aside from evaluation of the thyroid, biopsy can be helpful.
2) Lateral lesions in adults suggest metastatic noda disease from a head and neck primary and thorough search for such a primary should b undertaken before biopsy unless lymphoma i suspected.
3) Lesions around the ear suggest tumor of paroti origin and early biopsy requires superficial lobec tomy.
4) Lesions in the supraclavicular area suggest me tastases from a distant primary or lymphoma an indicates the need for early biopsy for diagnosis.
5) If these simple rules are kept in mind, the prope management and diagnosis of a neck mass will b more understandable.

## *Pediatrics*

# Childhood Sloth and Gluttony Causing Heart Attacks

**Warren F. Gorman, M.D., F.A.C.P.**

**elvin Cohen, M.D., Editor**

Coronary heart disease, which kills three-eighths of all mericans dying each year and disables many more, begins rly in childhood,[1] but can often be prevented.[7] The purpose this article is to describe some of the risk factors[5] which crease deaths and disability by this disease, and then to scribe an innovative program of primary prevention that directed toward children.

### oung Arteries

In ongoing studies on the natural history of atheroscle- sis, it has been shown that *before the age of 3,* fatty streaks, hich are composed of lipid deposits, appear both within the lls of the intima and the inner media of the aorta in vir- ually all children.[8] Between age 10 and 20, fatty streaks ppear in the coronary arteries. From age 20 on, these fatty reaks may progress to formation of fibrous placques. These thologic complications are causally associated and cor- lated with known "risk factors" and may well be retarded primary prevention in children.[11] Here are some of the luntary risks, or the risks which we can take, or remove, our own voluntary action.

### ack of Exercise

Prospective studies have shown that heart attacks occur rlier and more often and result in more deaths among ople who lead a sedentary life style than in those who are ore active. Additionally, among physically active people, e more active persons have fewer and less severe heart tacks.[14] Physical exercise increases the diameter of the ronary arteries, reduces the heart rate and increases the extraction ability of the heart muscle, all of which make e heart a more efficient pump. (Exercise also reduces the ood pressure, and hypertension is the principal risk factor stroke.) If there has already been a myocardial infarction, ith blockage of the coronary arteries, prescribed exercise omotes both the production of collateral arteries and the ening up of these collaterals.[9] Regular daily exercise at any e opens up these arteries. Thus exercise is a life sparing tivity, saving lives from heart disease and stroke.

But the family trait of living a physically inactive life can inculcated in children just as insidiously as entry into y point on the vicious circle in which a rich diet produces esity, which in turn contributes to further physical inactivity. Indeed, in one school study, most of the overweight youngsters had notes from their pediatricians excusing them from the school's physical education program![13] Instead of this approach, preventive cardiovascular medicine should start early in childhood.

### Involuntary Gluttony

In this land of relative plenty, we feed our children, and later our adults, large amounts of rich "goodies" as part of our usual diet, despite the fact that these goodies are both oversweetened and overpriced. Goodies involuntarily produce fatties, and obesity in childhood is a precursor of obesity in adults. Obesity, or weighing 10% to 20% or more than the desirable weight in early life, increases the size and the number of adipose tissue cells, alters the sensitivity to insulin and increases the work load of the heart.[17]

The intake of excess calories from any source, or of more than small amounts of saturated fat, is associated with an increase in the serum cholesterol,[18] which in turn is associated with a massive increase in the risk from coronary heart disease.

The usual children's diet, which produces fatty blood, requires only slight improvements to produce a major reduction in blood cholesterol. In one school study, the post pubertal rise in this serum lipid was cut in half by using polyunsaturated margarine, careful trimming of meats, replacing eggs with a low cholesterol substitute, and a special low-fat ice cream.[13] I believe that dietary habits which retard atherosclerosis should be established early in childhood.

### Lot's Wife

The median U.S. diet, which is rich in convenience foods, is also rich in salt, containing from 4,000 to 12,000 mgm of sodium a day, while 200 mgm or less is sufficient for the body's needs.[13] This low, and sufficient, intake of salt in early years may promote the maintenance of a low blood pressure.

### "Like a Cigarette Should"

Excess deaths from cancer of the lung and other lung disease are caused by cigarette smoking. In addition, smoking increases the fatalities from cancer of the bladder. Each cigarette you smoke shortens your life by eighteen minutes.

Cigarettes increase the morbidity and mortality from heart disease by two major mechanisms. First, the burning of the weed, paper wrapping and added chemicals produces car-

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From: 5602 E. Nauni Valley Dr., Scottsdale, AZ 85253.

boxyhemoglobin in the blood, as high as 10% to 20% in the blood of heavy smokers, "like a cigarette should." This produces tissue hypoxia, which promotes the deposition of cholesterol in the arterial wall. Second, cigarette smoking results in the release of epinephrine, and increased epinephrine levels cause endothelial damage and increased platelet aggregation.[17]

### Multiplication Table

Many laymen and all physicians know that the factors which place a person at risk of coronary heart disease are not only the three voluntary risks mentioned above – insufficient exercise, excess saturated fat and salt which promote obesity, and smoking – but also include hypertension, diabetes, emotional factors such as the Type A personality[12] and possibly job dissatisfaction,[16] plus inheritance and family history. What are the effects of several of these factors, simultaneously, on an individual who is free of disease?

A study of this subject was made on 3623 men, over a period of 16 years, with less than 2% lost to follow-up. In this and other studies, having two risk factors quadrupled a man's chances for coronary disease and having three such risk factors multiplied these chances by eight times. In an early study, the pair of factors that most strongly increased coronary death rates was systolic hypertension combined with smoking one or more packs of cigarettes per day.[7,14]

Now, to return to our children for whom we care, is not permitting them to multiply their risk of disease an insidious form of child abuse?

### Prevention in Childhood

Most physicians are best at the diagnosis and treatment of disease and not the removal of its risk factors. Dr. Glenn Friedman began to study risk factors while at the same time practicing pediatrics in Scottsdale, Az.

Friedman's first step was to determine the serum cholesterol of 2,033 normal children, ages 2 weeks to 19 years, among his office patients, using the Wybenga method which requires only a fingerstick for a droplet of blood, taken without regard to meals, because variation is only 3%. About one third of these otherwise healthy children had serum cholesterol values above 160 mgm%,[4] and were at risk. In collaboration with Dr. S.J. Goldberg, at the University of Arizona Medical School, and checking with the assistance of Dow Chemical Company, by double blind test methods, use of multiple laboratories and quality control, he confirmed both the accuracy of the technique and results.

By 1972, he began his offensive against the risk factors that cause heart disease and stroke,[5] by attacking them in the community. From the Nutrition Section of the Arizona State Health Department, Anita Yanochik Owen, in a program parallel to Dr. Friedman's, began to work with 10,000 families in Arizona to remove, she hoped, all of the alterable risks for heart disease and stroke.

Friedman emphasizes three cardinal features of his program: 1. This program tells you where you are now, and evaluates your future risks. Its function is to remove risks and not to diagnose or treat disease. 2. It is family oriented, designed not only to help high risk families, but all families, to enjoy a healthy and active life. 3. And at the heart of the approach are two big Fs – Follow-up and Feedback.

Both in the Health Department and in the school programs, the results have been splendid. Among a sample of 35,724 Health Department clients during the second half of 1976 there was significant improvement in 48% of those with underweight, 42% of those with high serum cholestero (where the criterion for improvement was a reduction of a least 25 mgm% of serum cholesterol) and 29% on the cardiovascular risk factor score.

### Adult Follow Through

After getting back the feel of success with risk reductio programs for the indigent and in the schools, Dr. Friedma engineered a pilot study at the Motorola Plant in Scottsdale which showed that people with lower risk scores have highe job satisfaction and job productivity, according to a study b Drs. Steven Wood and Robert Kreitner of the College of Business Administration at Arizona State University.

In 1974, a non-profit, tax exempt foundation was forme to give these services in private industry, with the name Health Evaluation Longevity Program, or HELP. Throug HELP, private business is beginning to see that about $4 per employee or proportionately less per family a year, wil also improve the working of the business. Local offices E.F. Hutton, Honeywell, Pharmaceutical Card Systems, Inc Standard Glass, as well as schools in Tucson and San Dieg the fire department in Mesa, Arizona, a group of facult members at Airzona State University in Tempe, and 70 faculty and staff members of Columbia University in Ne York have joined the plan.

According to Dr. Friedman, "your life style should be active and it should be fun at the same time. Men, women an children of all ages can spend about 30 to 60 minutes ever day doing some gentle continuous movement activity tha does not get you out of breath, but in which you don't sto Move the way you want to move. Measure either the time your distance, but not both. There's no need to race, or to g in for competition, because continual competition's not fu Any kind of physical exercise you enjoy is good – swimmin dancing and walking are real good. If you like to run, a fu way to go is to run gently and run long."

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# A Program to Teach Child Growth and Development to Medical Students During a Pediatric Clerkship

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## I. INTRODUCTION

The ability to distinguish between normal and abnormal growth and development patterns is important to the practice of pediatrics. Medical students learn about growth and development by reading, attending lectures, administering developmental tests to children (e.g., the Denver Developmental Screening Test), and by obtaining developmental histories from parents. The children examined by medical students may be either sick or well and may be seen by the student in either an out-patient or an in-patient setting. These environments are unnatural. The child may be frightened and uncomfortable and may not respond as he might in more familiar surroundings.

The faculty of the Department of Pediatrics at the University of Arizona College of Medicine designed a program to give medical students a more realistic idea of the growth and development of normal, healthy three- to six-year-old children. It was hypothesized that medical students given the opportunity to observe and interact with healthy children in a nonmedical setting would gain a better perspective of growth and development than students not having such an experience.

## II. METHODOLOGY

During orientation on the first day of each pediatric clerkship, all students were given several pages of reading material on child growth and development. This material described the motor, emotional, intellectual, language, personal, and social development of three-, four-, five- and six-year-old children. Students were then assigned to spend approximately three hours in a pre-school with three- and four-year-old children and approximately three hours in a kindergarten class with five- and six-year-old children observing and interacting with them. Each student was asked to function as a teacher's helper. It was believed that the medical students would obtain a more realistic perspective of children's capabilities if they were active, rather than passive, observers.

## III. RESULTS

Student attitude toward the program was excellent. At the end of each clerkship a questionnaire, including an open-ended question about the project, was distributed to the students. Positive comments included such statements as "especially enjoyed watching healthy children interact and engage in activities appropriate for age," "as valuable for learning development and individual variation as the entire time spent in the clinic," and "gave me the opportunity to compare well children to hospitalized ones and allowed me to better know what my patients were probably like outside the hospital setting." Only one student responded negatively, saying that he was annoyed at being "forced" to go.

The pediatric faculty expressed belief that the students had gained a realistic perspective of children's developmental capabilities and appeared to be more at ease with children in the clinical setting. However, there was a concern that the time spent at the preschool might limit the student's study time and result in a decrease in factual knowledge about growth and development. A study was conducted to determine if there was a difference between the amount of factual knowledge in growth and development possessed by students in the experimental group compared to a randomly assigned control group of students who had the same reading assignments but had not attended the pre-school and kindergarten. On an objective short answer examination there was no difference in the average performance of the two groups. It was concluded that the exposure to children provided an equally effective and more interesting learning experience. The student's ability to perform developmental assessments was not evaluated directly but subjective data suggests that this skill was enhanced in students in the experimental group.

## IV. SUMMARY

This project has offered an alternate method to teach normal growth and development that is both realistic and enjoyable.

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*Renal Disease*

# Hyponatremia

*Editor's Note: A similar review appeared in December, 1975 in seminars in Endocrinology and Metabolism.*

**Georgetta Bidwell, M.D.**

**Editors**
**Georgetta C. Bidwell, M.D.**
**George Nickas, M.D.**

Hyponatremia is defined as a decreased serum sodium. This reflects total body osmolality or in other words the patient's water status. The level of serum sodium is irrespective of total body sodium, which may be increased, decreased, or normal. A low serum sodium indicates water excess when the spurious hyponatremias are excluded. Three conditions may cause the serum sodium to appear low when in reality total body osmolality is not low. Hyperglycemia may cause a depression of sodium in the order of 2meq/1 for each 100mgm% of sugar elevation. The increased glucose extracellularly draws water out of the cell creating intracellular hypernatremia, thus lowering the serum sodium concentration and giving a falsely low estimate of body osmolality. Proteins present in large abnormal quantities such as multiple myeloma or macroglobulinemia may depress serum sodium. Hyperlipidemia also may spuriously decrease sodium-fat occupying space in the pipette used to measure a sample. A five percent increase in free fat results in a five percent decrease in serum sodium.

Excluding the above conditions, we come to the true hyponatremias. True hyponatremia may be produced by decreased effective intravascular volume. This may result from true volume depletion, such as in patients with excessive GI fluid losses, acute blood loss or with excessive third spacing in post op patients. Hypoproteinemia such as in patients with nephrotic syndrome, cirrhosis, or CHF may produce decreased effective intravascular volume and stimulate volume receptors to signal the release of ADH resulting in water retention and hyponatremia.

ADH, antidiuretic hormone, is an octapeptide released from the supraoptic nuclei of the hypothalamus and stored in the posterior pituitary. The distal collecting tubule and collecting duct of the kidney responds to ADH via cyclic AMP by increasing its permeability to water, resulting in ir creased water in the vasculature and decreased free water i the urine.

There are non osmotic stimuli to ADH release, such a pain, emotional stress and drugs such as Chlorpropamid Clofibrate, Vincristine, barbituates and thiazides. Ther mode of action is to increase ADH release plus increase ren tubular sensitivity to ADH.

Inappropriate ADH is defined as an excess ADH effe either due to increased release or increased peripheral effec The disorder is manifested by an inappropriately conce trated urine for the serum osmolality, even if that urine isotonic. Additional criteria include normal total body s dium, renal, thyroid and adrenal function plus correction the disorder by water restriction. Those lesions which pr duce renal insufficiency with distal renal tubular involv ment impair free water clearance and cause hypnatremi without inappropriate ADH. Adrenal insufficiency impai free water clearance via lack of steroid effect on the kidne plus volume depletion stimuli.

Inappropriate ADH syndromes (SIADH) may be caused b CNS lesions, pulmonary lesions (TB, abcesses), tumors wit ectopic production such as oat cell bronchiogenic carcinoma carcinoma of the pancreas or prostate and the so called sic cell syndrome or reset osmostat.

Effective treatment depends on proper diagnosis of th underlying condition and assessment of the patient's clinic status. If the patient is volume or protein depleted, replac volume or protein according to estimated losses. Return t normal effective renal perfusion restores free water clearanc to normal and thus serum sodium.

Treating the underlying pulmonary or CNS lesion is d sirable, but often a long term or difficult process. In cases SIADH the key to treatment is water restriction. It may tak

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ays for return of the serum sodium toward normal. Water estriction must be severe – in the range of 300-500cc maxmum per twenty-four hours.

Drugs such as Lithium and Demeclocycline have a role in he treatment of chronic ADH syndromes, such as those econdary to ectopic production from lung tumors.[1] These rugs have both central and peripheral effect, but the peipheral effect predominates.

The role of hypertonic saline must be discussed briefly. lthough much controversy still surrounds this, if a patient as severe CNS symptoms such as seizures or progressive btundation than partial more rapid correction is necessary. his may be exemplified by the following case. A comatose atient with a Na = 105 may be corrected up to a Na = 110 – total of 5meq/1 of total body water. In a 60kg patient this ould be 60% total body weight or about 42 liters. The rrection to a Na of 110/meq/1 from 105meq/1 being 5 × 42 210 meq. This can be given in hypertonic solution of small olume.

In general the more rapid the condition has arisen, the ore rapid partial correction can be made with impunity. lower evolving processes should be corrected more slowly. no case should total correction be attempted with hypernic saline.

Finally another acceptable approach is to use Lasix to uresis the patient, quantitate the sodium in the urine and place this in a small volume of hypertonic saline.[2]

The key to management of hyponatremia is proper underanding of the underlying pathophysiologic mechanisms inlved.

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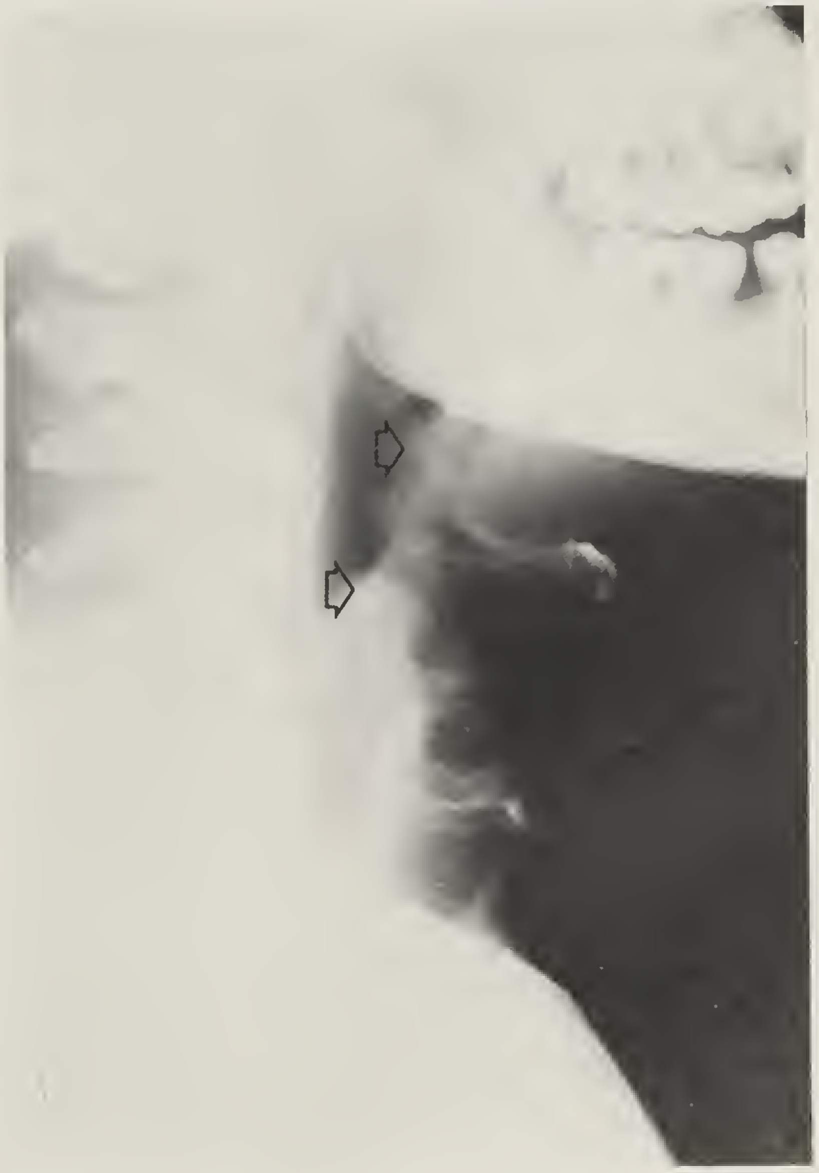
## Radiology

## Case #23

**Walton S. Launey, Jr., Ph.D., M.D.**
**Tim B. Hunter, M.D.**



**A 37-year-old male presented to the emergency room with an 18-hour history of sore throat, progressing dyspnea and dysphagia, and an elevated temperature of 38.0°C. Routine chest X-rays were normal. A lateral soft tissue view of the neck demonstrated the correct diagnosis (figure). What does this show?**

From: Department of Radiology, Arizona Health Sciences Center, University of Arizona, Tucson, Arizona 85724.

# Acute Epiglottitis

The epiglottis has indistinct borders and is swollen (top arrow). In addition, there is thickening of the aryepiglottic folds (bottom arrow) and slight distention of the hypopharyngeal air space. The clinical history and radiographic findings are characteristic of epiglottitis. A sudden onset with rapid progression is typical, and the usual symptoms are drooling, muffled cough, sore throat, dysphagia, dyspnea, and high fever.(1)

Acute epiglottitis is usually thought of as occurring in children. However, it does occur in adults as well. In fact, its incidence in adults may be increasing and it must be considered as one of the causes of acute upper airway obstruction, albeit uncommon. There is some risk attached to physical examination of the upper airway. An upright lateral radiograph of the neck during inspiration is relatively safe and potentially diagnostic (figure). Various pathogens have been implicated, including *Haemophilus influenzae*. Ampicillin is the treatment of choice for sensitive bacterial strains. Early diagnosis and treatment are important in mana ment, since the mortality rate can exceed 30%. About half of the cases will require airway management by t cheostomy or endotracheal intubation.(2,3)

In addition to the radiographic findings of this case lateral radiograph of the neck may demonstrate swelling the arytenoids, uvula, and prevertebral soft tissues. T valleculae may be narrowed or obliterated, and the swol epiglottis may significantly narrow the adjacent airw Correlation of the clinical history and radiographic findi should be made to eliminate the possibility of acute airw obstruction by a foreign body.

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AM *Special Article*

# The Doctor Sues His Patient

**John H. Westover**
**James E. Vieh**

Any physician who has considered a countersuit against a patient or his lawyer should find this article interesting. Their conclusions may not warm the harried heart of the frustrated physician, but they are well supported by the cited law.

The tremendous proliferation of medical malpractice actions and the increasingly litigious quality of American life have in recent years exposed many physicians to unfounded malpractice claims. The crisis in malpractice insurance has inflated the cost of premiums from $61 million in 1960 to $1.5 billion in 1974 simply because of the rapidly escalating number of claims. Insurance company figures indicate that the average award was $8,000 in 1974. Of the 10% of malpractice claims which go to trial, two-thirds are won by the doctor. When the patient wins these litigated cases, however, the average award is reported as $133,817 with awards over $1 million becoming more and more common.[1]

With increasing frequency we are asked by doctors who are defendants in malpractice suits, "Can I counter-sue?" Our answer with monotonous uniformity has been, "We don't think you have a valid claim against your former patient or the patient's attorney." Because of the interest expressed by so many doctors, we have attempted to survey the known experience of physicians who sued either their patient or the patient's attorneys or both as a result of having themselves been sued by the patients.

The most frontal legal attack on patient who has brought an unsucce ful malpractice action is a suit malicious prosecution. The action malicious prosecution has its histori origins in criminal law. If a defenda was unjustly prosecuted for a crimir offense, solely for reasons of malice a harassment, if there was no reasonal basis to believe the defendant was gui of the crime and if the defendant w ultimately exonerated, the defenda could subsequently sue his prosecut for malicious prosecution. This theo of law has been carried into the field civil litigation. If a plaintiff malicious sues a defendant in a civil action simp to vex and harass the defendant a without any honest belief in the validi of the claim, a vindicated civil defenda may thereafter sue the unsuccessi plaintiff for malicious prosecution a recover damages.

Suits for malicious prosecuti brought by physicians against patier who had earlier sued them unsucce fully for medical malpractice, we practically non-existent until rece years. There are apparently no report opinions involving such a case befc 1970. The recent proliferation of m

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actice actions, however, has resulted a modest number of malicious prose- tion suits brought by medical practi- ners against patients and their attor- ys. Many of these suits by physicians ainst patients have ultimately proved nsuccessful since the courts have re- ained strict in maintaining the re- irements for an adequate showing of alice.

The essential elements of a cause of tion for malicious prosecution brought ainst an unsuccessful plaintiff-patient e not different from those of any other vil action for malicious prosecution. ne Arizona Supreme Court recently held a trial court which dismissed a ysician's action for malicious prosecu- n brought against a former patient d the patient's attorney.[2] The court umerated the essential elements hich must be shown in order to suc- ed in such a malicious prosecution tion. They are:

(1) The institution of a proceeding,
(2) actuated by malice,
(3) without probable cause by the de- ndant in the action,
(4) which terminated in the plaintiff's vor,
(5) and caused him damage.

The court went on to state that a aintiff's failure to establish a lack of obable cause is a complete defense to action for malicious prosecution, ting *Slade v. City of Phoenix.*[3] In *Slade,* hich involved a police officer as de- ndant, the court defined "probable use":

> "Probable cause is a reasonable ground suspicion, supported by circumstances fficient to warrant an ordinarily pru- nt man in believing the accused is ilty of the offense. The test generally plied is whether, upon the appearances esented to the defendant, a reasonably udent man would have instituted or ntinued the proceeding."

n action is "actuated by malice" if it is rought primarily for a purpose other han that of securing appropriate action y the court. "Malice" may consist of a rimary motive of ill will, or a lack of elief in any possibility of success of the ction, but neither is necessary to it.[4] alice has been found where a proceed- g was begun primarily for a purpose ther than the adjudication of the claim the suit. The jury may infer an im- roper purpose simply from the lack of robable cause.[5]

The plaintiff in a medical malpractice uit ordinarily hopes to receive money compensation for alleged injuries. This desired compensation is the *raison d'etre* for medical malpractice litigation. Such pecuniary motivation alone, therefore, does not amount to "malice" at law, since the patient's lawsuit was brought for the very purpose such actions are supposed to serve.

It has often been observed that malicious prosecution is a cause of action which the courts do not favor and we know of no physician who has ever successfully sued a patient on this basis in Arizona. In recent years, however, there have been a few semi-successful suits in other states and it may be that a trend is emerging.

In June of 1976 orthopedist Jerome Levine of Plainview, New York, countersued a patient who had sued him. Earlier he had brought an action against her for a $470 medical bill. She responded with a malpractice suit and he replied with a countersuit for abuse of process, charging her with knowingly filing an unfounded suit. The patient retreated, paying her $470 bill and Levine's subsequent legal costs. Because of the settlement, the case never went to trial. An oral surgeon on the East Coast recently secured $4,500 in damages plus court costs at the trial level. Since the patient did not appeal, no opinion was rendered.

A number of suits have been filed by doctors against the attorneys of patients who have sued them.[6] Eugene Balthazar, a G.P. of Aurora, Illinois, is seeking $10,000 in punitive damages from the lawyers of a plaintiff-patient who failed to show up in court on the day of the malpractice trial.[6a] Surgeon James Rogers of Joliet, Illinois, has filed an $11,000,000 suit against a former patient and the patient's attorney who sued him. They are charged with bringing "reckless, slanderous, harassing, irresponsible, incorrect, . . . unjustified, deceitful and fraudulent" charges against him. A Michigan urologist, Seymour Friedman, brought suit against two attorneys in Detroit, charging them with malicious prosecution in a malpractice case which the judge dismissed before it reached the jury. John B. Sullivan, an orthopedist of Fort Pierce, Florida, brought a multimillion dollar suit in May of 1976 against two separate malpractice plaintiffs and their attorneys, after both plaintiffs dropped their suits before trial. Alleging that the plaintiffs' suits caused his malpractice carrier to drop his insurance, Sullivan charged the plaintiffs with malicious prosecution and charged their attorneys with professional negligence. None of these cases has yet produced a published opinion by the court which would provide any judicial precedent.

In June of 1976 an Illinois jury awarded a radiologist $2,000 in compensatory damages and $6,000 in punitive damages in a suit he brought against a former patient.[7] Harriet Nathan injured her little finger while playing tennis on October 1, 1973. Two years later, on September 11, 1975, Mrs. Nathan and her husband, Gilbert Nathan, who was an attorney, brought suit against Dr. Leonard Berlin, claiming that he had negligently failed to discover the fracture in an X-ray and as a result she suffered a lasting disability. The Nathans sought damages of $250,000 from Dr. Berlin who was a neighbor of theirs. In a separate action, Dr. Berlin brought suit against the Nathans and their attorneys, Fred Benjamin and Stuart Shapiro. The radiologist defended by showing that the fracture did not appear on the first X-rays, and that in any case the patient received the same treatment she would have received for a fracture. On the advice of counsel Mrs. Nathan dropped her claim. Dr. Berlin, however, continued his claim which included an allegation of barratry." This allegation was made pursuant to an Illinois statute which defines the offense for criminal purposes, and which Berlin hoped to use in his civil suit.

> "If any person shall wickedly and willfully excite and stir up any suits or quarrels between the people of this state, either at law or otherwise, with a view to promote strife and contention, he shall be deemed guilty of the petty offense of common barratry; and if he be an attorney or counselor at law, he shall be suspended from the practice of his profession, for any time not exceeding six months."[8]

Eventually Berlin's claim of barratry was replaced by a claim that the decision to bring the action against him constituted "wanton and reckless conduct" by the Nathans and their attorneys.

At trial, expert medical witnesses testified that Berlin had exercised the required standard of care in treating Mrs. Nathan. Two experienced attorneys provided testimony that the Nathans' lawyers had failed to exercise the standard of care required of lawyers when they brought the suit against Dr. Berlin. Dr. Berlin's unusual theory, that the attorneys representing the plaintiff in the malpractice action owed the adverse party a duty to carefully research the facts and law before filing a malpractice claim, was permitted by the judge to reach the jury. The jury returned a verdict of $8,000 for Dr. Berlin. An appeal is now pending.

Two other Chicago physicians have brought lawsuits similar to Dr. Berlin's. A surgeon in Houston has filed an action seeking $1 million from the attorney representing a plaintiff in a medical malpractice action against the surgeon.[9] There are other reports of countersuits by doctors in California, Florida, Maryland and Missouri.[10]

*Spencer v. Burglass*[11] involved a Louisiana lawsuit brought by a physician against the attorney of a patient who had earlier sued her unsuccessfully for malpractice. Dr. Spencer brought her action on two bases: Malicious prosecution and a Berlin-like allegation that the attorney breached an affirmative duty owed to Dr. Spencer not to involve her in groundless litigation.

The court concluded that there was no malice shown. The defendant's attorney's failure to interview his witnesses before the malpractice trial did not constitute malice. His failure to get "complete medical advice" before filing the malpractice action merely meant that he went to trial with a poor case and lost. In rejecting Dr. Spencer's suit against the attorney, the court concluded:

"The notion that defendant as the attorney for the party in the malpractice case was guilty of malicious prosecution seems to distort the role of an attorney in any case. The suit was filed by the attorney only in a technical sense since he may have signed the petition, but it was in fact an action instigated and carried on by the plaintiff in that malpractice case himself . . . His attorney, defendant herein, was simply the instrument through which he invoked the judicial determination and in the absence of some allegation which would support specific malice by this attorney motivating him to persuade his client to initiate and continue his malpractice case against the doctor, no cause of action is stated against defendant as an attorney for malicious prosecution."

The court also denied that the attorney violated a duty not to involve Dr. Spencer in a frivolous lawsuit.

"[The] defendant's initial filing of the suit can hardly be regarded as a breach of duty because this presupposes that he should have known at that early state of the litigation that no convincing evidence could be discovered or developed. But when the time came for the trial of the case, and he still had no evidence, his duty to plaintiff to drop the case was tempered by . . . Canon 42 . . . and Canon 30 . . ."

The cited Canons of Professional Ethics impose duties on a lawyer not to abandon a client's case except in extreme circumstances. The court thus denied the existence of any duty by a lawyer not to involve a doctor in litigation, such as provided the basis for Dr. Berlin's $8,000 verdict in Illinois.

No one, to our knowledge, has ever brought a retaliatory suit in Arizona on the basis of barratry, although Arizona does have a criminal barratry statute.[12] Like the Illinois law, the Arizona statute makes no provision for a civil action against a plaintiff who brings a suit "to distress or harass" another. In a criminal action for barratry the Arizona statute requires proof that the defendant incited an action "in at least three instances, and with a corrupt and malicious intent to vex and annoy." The Arizona barratry statute has never been mentioned in a published opinion in any criminal case much less employed as the foundation for a civil action. One must doubt that the Arizona barratry statute will ever provide yeoman's service to plaintiff-physicians who seek retributive justice.

It is interesting to note that Illinois law permitted the patient's claim and the physician's counterclaim to be tried together in *Berlin.* In a 1971 decision the Supreme Court of California refused to permit a physician to bring a counterclaim for malicious prosecution in the same suit in which his former patient sued him for medical malpractice. The California court insisted on the traditional rule that no malicious prosecution claim would exist until the original malpractice action was terminated in favor of the physician.[13]

*In Mataros v. Superior Court,* No. 12837 (Nov. 30, 1976) the Arizona Supreme Court recently reaffirmed that no cause of action for malicious prosecution exists until and unless the original proceedings are terminated in favor of the person asserting the malicious prosecution claim. This means that in Arizona, in a malpractice suit brought by a patient, the defendant physician cannot bring a counterclaim for malicious prosecution, but must wait until he is vindicated in the malpractice action.

Because of their lack of success wi
malicious prosecution actions, so
medical doctors have employed oth
bases for actions against unsuccess
patient litigants, where local law w
permit. A few suits have recently be
filed by physicians against former p
tients and their lawyers on the basis
libel. *Foster v. McLain*[14] involved a su
brought by a surgeon against a law pa
nership, alleging that they, togeth
with the plaintiffs in the malpracti
action, had libeled him.

In most states a participant in judici
proceedings has an absolute privile
"to publish false and defamatory matt
of another in communications prelin
nary to a proposed judicial proceedi
or in the institution of or during t
course and as a part of a judicial procee
ing in which he participates, if the m
ter has some relation thereto."[15]
though no Arizona cases have express
adopted this view, it has been me
tioned with approval by Arizona court
and is clearly the law in California
This means that an attorney has co
plete immunity from any legal action
slander or libel arising out of statemer
made by the attorney in pleadin
motions, hearings or courtroom a
pearances.

Louisiana, however, provides judici
allegations with only a qualified i
munity. In order for this limited i
munity to be effective in Louisiana t
defamatory statements must be materi
to the case, they must be made wi
probable cause to believe they are tr
and they must have been made witho
actual malice. To win this sort of lib
suit, Louisiana law requires the defam
physician to show that the allegatio
were false, that they were made witho
probable cause by the plaintiff to b
lieve they were true, and that they we
made with actual malice. "Actual m
ice" exists when a false statement w
motivated by personal spite or ill w
and when it was made with reckle
disregard for the truth.

The malpractice complaint in *Fost*
stated that the defendant surgeon h
left a sponge or cotton in the plaintif
abdomen. The initial malpractice li
gation generated substantial newspap
publicity offensive to the surgeon, D
Foster. Consequently, he sued his patie
and the patient's attorneys for libel a
secured a jury verdict of $33,000. (
appeal, however, a Louisiana appella
court reversed the jury, finding that t
patient and her attorneys had probab

ise, even though no sponge was ac-lly left in the patient's abdomen. The irt said, in addition, that no malice d been shown. Dr. Foster's case was reafter dismissed.

Texas doctor who sued his patient filing a groundless and unfounded dical malpractice suit against him, ently lost an appeal in San Antonio.[18] e court rejected the doctor's theory t the patient's unfounded lawsuit stituted an invasion of Dr. Wolfe's vacy. As in the case of libel claims, court held that civil lawsuit pro-dings enjoyed an absolute privilege h respect to any subsequent claim for asion of privacy.

rizona courts would not permit a sician's action for libel and slander ed solely upon the incidents of an successful malpractice suit. In Ari-a, as in most states, the attorney's vilege to engage in defamatory re-rks during the course of litigation is ost plenary.

Ve conclude that it remains nearly possible for a medical practitioner to ain any satisfactory relief from the ient who has brought an unfounded lpractice suit. Although it seems cking to doctors, the fact is that ler the law of Arizona a patient and attorneys are privileged to defame octor in the course of malpractice ceedings.

he commencement of the physician's ntersuit for malicious prosecution st await his exoneration in the pre-ing malpractice action. He must show t the patient's suit was actuated by lice and brought without probable se. In practice these hurdles are so ere that the physician is left without al remedy. Such distinguished trial yers as Melvin Belli of San Francisco, n Wolfstone of Seattle and Alfred ien of New York City agree that tors' countersuits are very unlikely succeed, even if they do become more mon.[19] If recent cases suggest that medical profession has begun to open door towards judicial vindication of exploited physician, the fact remains t the opening is only a crack. More portant, there is no appellate decision ere any doctor has yet collected a cent n such a claim. In the absence of e appellate precedent which alters rent legal principles, most of these suits by doctors must be viewed as xotic.

REFERENCES

1. Bugliari, Joseph, "The Medical Malpractice Dilemma" in *Executive* (Cornell University, Fall 1976), p.32.
2. *Carroll v. Kalar*, 112 Ariz. 595, 545 P. 2d 411 (1976).
3. *Slade v. City of Phoenix*, 112 Ariz. 298, 541 P.2d 550 (1975).
4. Prosser on Torts, § 120.
5. Ibid.
6. "The Growing Trend Toward Malpractice Countersuits" in *Medical Economics* (Sept. 20, 1976), p. 202.
   a. In the early part of 1977 the judge in this matter dismissed two of five counts brought by Dr. Balthazar. Shortly after the trial before the judge commenced, the other three counts were also dismissed. Dr. Balthazar is taking an appeal and is apparently receiving some assistance from the Illinois State Medical Association.
7. *Berlin v. Nathan*, Illinois Cir. Ct., Cook County, Docket No. 75-M2-542, June 1, 1976.
8. Chapter 13, Illinois Revised Statutes, §21.
9. "Retaliatory Actions by Defendants in Medical Malpractice Actions" in Defense Law Journal, Vol. 25, No. 5 (1976).
10. American Medical News, June 14, 1976.
11. *Spencer v. Burglass*, 288 So.2d 68 (1974); 337 So.2d 596 (1976).
12. A.R.S. §13-261
    A. A person is guilty of barratry who:
       1. Willfully instigates, maintains, prosecutes or encourages bringing an action or presentation of a claim in which such person has no interest, for his own profit, or with intent to distress or harass defendant or the person in the action to whom the claim is presented.
       2. Willfully brings or prosecutes a false action of his own, for his own profit, or with intent to distress or harass defendant therein.
       3. By personal solicitation seeks to obtain employment to prosecute, defend, present or collect any claim.
       4. By himself or another, seeks or obtains such employment by giving, loaning or promising to give, directly or indirectly, to the person from whom the employment is sought, money or other thing of value.
    B. An attorney at law or other person is guilty of barratry who:
       1. Seeks or obtains employment in an action to prosecute or defend it by means of personal solicitation of such employment, or by procuring another to solicit for him employment in such cases.
       2. By himself or another, seeks to obtain the employment mentioned in paragraph 1 of this subsection by giving, loaning or promising to give, directly or indirectly, to the person from whom employment is sought money or other thing of value.
    C. Barratry shall be punished by a fine not exceeding five hundred dollars, by imprisonment in the county jail for not to exceed three months, or both.
    D. No person shall be convicted of barratry except upon proof that he has incited an action or proceedings in at least three instances, and with a corrupt and malicious intent to vex and annoy.
13. *Babb v. Superior Court of Sonoma County*, 92 Cal. Rptr. 179, 479 P.2d 379 (1971).
14. *Foster v. McLain*, 198 So.2d 463 (1967); 228 So.2d 492 (1969); 251 So.2d 179 (1971).
15. Restatement of Torts, §587.
16. *Melton v. Slonsky*, 19 Ariz. App. 65, 504 P.2d 1288 (1973).
17. *Washer v. Bank of America Nat. Trust & Savings Ass'n.*, Super. Ct. Cal., 136 P.2d 297 (1943).
18. *Wolfe v. Arroyo*, 543 S.W.2d 11 (Court of Civil Appeals of Texas, San Antonio, 1976).
19. Reynolds, James, "How Plaintiff's Attorneys View the Countersuit Tactic" in *Medical Economics* (Oct. 4, 1976), p. 73.

# Medicine in Mexico

## I. Introduction

**Charles C. Daschbach**
**Robin J. Connolly**

**(First in a series of articles covering aspects of interest about Mexican medicine. Other articles will discuss Mexican drugs, education, rural and urban health care, socialized system of delivery, folk medicine and recent progress in public health.)**

Among students of Latin American culture, politics and geography, the country of Mexico is known as "the land of contrasts." Her image of sleepy little villages belies this nation with the fastest population growth in the western hemisphere. This descriptive contrast is also befitting her system of medicine and public health. While surgeons trained in the best graduate programs in the world perform open heart surgery

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Third semester medical students at the Autonomous University of Guadalajara. Address reprint requests to Mr. Daschbach, c/o 1101 S. Lehigh Dr., Tucson, AZ 85710.

**Table 1. Population Characteristics and General Health Indices for Mexico and the United States, 1976.**[1]

| | USA | MEXICO | |
|---|---|---|---|
| total population 1970 | 205 | 49.1 | million |
| current estimate 1976 | 215.3 | 62.3 | million |
| projected population 2000 | 262.5 | 134.4 | million |
| rate of population growth | 0.8 | 3.5 | annual % |
| birth rate | 15 | 46 | per 1,000 pop. |
| infant mortality | 17 | 61 | per 1,000 live births |
| death rate | 8 | 9 | per 1,000 pop. over 1 yr. old |
| life expectancy at birth | 71 | 63 | |
| median age | 28.1 | 16.8 | |
| population under 15 years | 27% | 46% | |
| population over 65 years | 9.9% | 3.1% | |
| % urban population | 74% | 61% | |
| per capita GNP | 6,640 | 1,000[2] | in U.S. dollars |

[1] data from Population Reference Bureau, April 1976
[2] before the 1976 devaluation of the peso

in Mexico City, *curanderos* sell herbs and give medical advice in the marketplaces.

Mexico's health problems today are the direct and indirect results of centuries of abject penury, yet the Department of Public Health (the *Secretariat de Salubridad y Asistencia,* or SSA) has made remarkable progress in the last fifty years. This progress will be seriously challenged by a population which will grow from 62 million today to over 130 million by 2000 a.d. Realizing that it is difficult to compare the health profiles of developed and developing nations, Table 1 attempts to show some of the population characteristics of Mexico and the United States which denote gross health standards. It is also difficult, and perhaps misleading, to generalize about health conditions in a rapidly developing country. Nevertheless, Mexico's greatest health problems are considered to be the "diseases of the poor." These may be grouped into (1) those primarily resulting from the insufficiency of potable water and hygienic practices (e.g., epidemic diarrhea, amebiasis, parasitosis and typhoid); (2) those due to malnutrition (urinary lithiasis, goiter and avitaminosis); and (3) those resulting from poor environments (toxoplasmosis and rabies).

Mexico's population is highly polarized, with bimodal economic, cultural and demographic characteristics. Almost forty percent live in rural areas with the remainder highly concentrated in a few metropolitan areas. Fifty-five percent of the people are mixed racially (called *mestizos*) with close to thirty percent native indians and fifteen percent of pure European ancestry. Literacy rates are difficult to determine, but over five million persons speak indigenous native languages and more than one million speak them exclusively.

Further complicating this profile is chronic unemployment, an easily overlooked factor in health problems. Official government estimates give a work force of 16 million Mexicans with about forty percent of this work force continually underemployed. Almost half of Mexico's population is under fifteen years of age and over 1.2 million persons enter the job market each year. While these figures must have strong social ramifications, few studies have attempted to measure their impact upon alcoholism, mental health and hygiene.

To examine any aspect of Latin American history, economics *or medicine,* it must be remembered that the contrasts seen today have evolved and coexisted for hundreds of years. This confusing view is further distorted by cultural differences as seen from a more developed country. The purpose of the articles in this series will not be to point out particular problems or accomplishments, but to introduce the reader to a complex and fascinating system of health care, medicine in Mexico.

---

*U. of A.*
*Grand Rounds*

# Vasodilator Therapy in
# Coronary Artery Diseas
# Part II

**W. David Hager, M.D.**

**Editors:**
**Jay W. Smith, M.D.**
**Robert Hyland, M.D.**

THERAPEUTIC GOALS IN ISCHEMIC LE
VENTRICULAR THERAPY:

The aims of therapy in a patient w
left ventricular pump failure second
to ischemia are threefold:

(1) To increase forward cardiac f
and relieve the symptoms of
tigue, obtundation, and oliguri
(2) To relieve central congestion
eliminate dyspnea and orthopn
(3) To decrease ischemia, ther
alleviating pain and minimiz
ST segment elevation, the elec
cardiographic evidence of card
injury.

The above described hemodyna
effects of vasodilator therapy on b
the arterial and venous circulati
reduce the cost of cardiac work in te
of myocardial oxygen consumption.
duced impedance to left ventricu
ejection lowers systolic wall tension
enhances forward flow without incre
ing heart rate. An expanded venous
relaxes end-diastolic fiber stretching
alleviates central congestion (Fig.
The effect of vasodilators on myocard
perfusion will be discussed below.

RESULTS OF THERAPY:

A review of the clinical results in
own patients and in the literature
fines some of the benefits and compli
tions of using vasodilator therapy.

**Case Report:** E. V. (TVAH #7043) i
64-year-old retired engineer who v

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From: Arizona Health Sciences Center, Univer
of Arizona College of Medicine, Veterans Adr
istration Hospital, Tucson, Arizona
Presented February 2, 1977. Dr. Hager, Asst.
fessor of Medicine, Dir. of CCU, VAH.

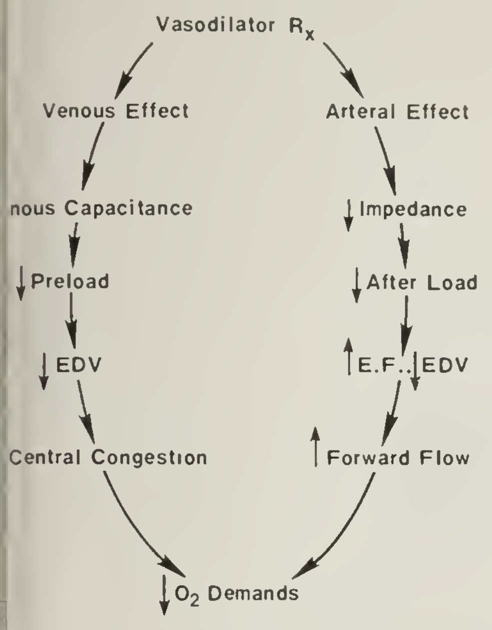


Fig. 5

itted to the hospital in December 6 for evaluation of dyspnea and chest n. He had had angina since 1966. In 1, he sustained an inferolateral myodial infarction. In 1974, he undert a single coronary artery bypass ft which subsequently occluded. He . an anterior myocardial infarction November, 1975, and during the 12 ths prior to admission, he had perent angina, increasing congestive rt failure, and a weight loss of apximately 50 pounds. His medications the time of admission included .25 . digoxin daily, 120 mg. lasix twice a , 5 mg. isosorbide dinitrate subually every 4 hours, 2 inches of oglycerin paste every 6 hours, and to 6-10 nitroglycerin tablets subually each day.

n physical examination he had a od pressure of 90/70 mm Hg, a pulse 104, and normal respirations. He apred thin and chronically ill. There s a diminished volume in his carotid ses, and bibasilar rales were present auscultation. Cardiac exam revealed iffuse left ventricular impulse. $S_1$ was mal. $S_2$ was single. There was a loud rd heart sound. The liver expanse s increased to 16 cm. The hands and t were cool, but there was no peripherl edema.

His chest x-ray showed cardiomegaly d increased pulmonary venous patn. He underwent cardiac catherter-tion, which revealed a markedly pokinetic left ventricle with an ejecn fraction of 23%.

ollowing left ventricular and corory angiography, a thermal dilution an Ganz catheter was positioned in pulmonary artery to permit hemonamic monitoring in the coronary care unit. After obtaining baseline determinations, an infusion of nitroprusside at 30 μg/min. was initiated. The mean arterial pressure dropped from 71 to 68 mm Hg, and the pulmonary capillary wedge pressure fell from 30 to 18 mm Hg. The heart rate did not change. Cardiac index increased from 1.77 to 2.57 L/m², and the stroke work index rose from 10.5 to 18.6 g-m/m². The systemic vascular resistance was lowered from 1905 to 1254 dynes-sec. cm⁵. The nitroprusside infusion was discontinued, and following the return of the hemodynamic measurements to the baseline level, 5 mg. of isosorbide dinitrate was given sublingually. Again, the mean arterial pressure was essentially unchanged, and the filling pressure fell from 32 to 18 mm Hg. The heart rate actually decreased from 96 to 88. Cardiac index and systemic vascular resistance did not change.

These data indicate that nitroprusside generated a shift upward and to the left on the graph depicting the patient's ventricular function. With isosorbide dinitrate, his improvement was described by a horizontal shift to the left on the graph (Fig. 6). Since systemic resistance was unchanged with isosorbide dinitrate, the improvement may be attributed to pure preload alteration. It was clear from these interventions that the patient would benefit from both preload and afterload reduction on a chronic basis. He was therefore started on therapy, including isosorbide dinitrate and nitroglycerin ointment to lower preload and hydralazine to lower afterload.

**Reports from the Literature:**

Several studies have shown that vasodilators enhance cardiac performance in the acute myocardial infarction. The first report was that of Franciosa et al.[3] Fifteen patients with acute infarcts were evaluated, and treatment with nitroprusside in doses between 30 and 150 μg/min was given. Mean arterial pressure was reduced 15.5%, with systolic pressures falling an average of 26 mm Hg. There was a 50% reduction in the left ventricular filling pressure, with the mean control values of 22.7 dropping to 11.3 mm Hg. Cardiac output rose in patients with left ventricular failure and changed little in patients with normal baseline indices. Heart rate did not change. Myocardial oxygen consumption was not measured in this study, but the clinical improvement in these patients, with decreases in dyspnea, diaphoresis, and pain and in-

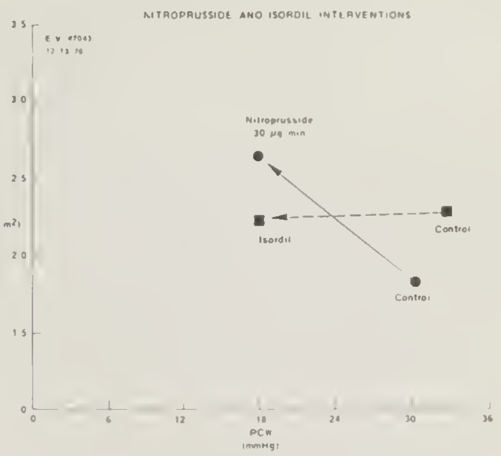


Fig 6

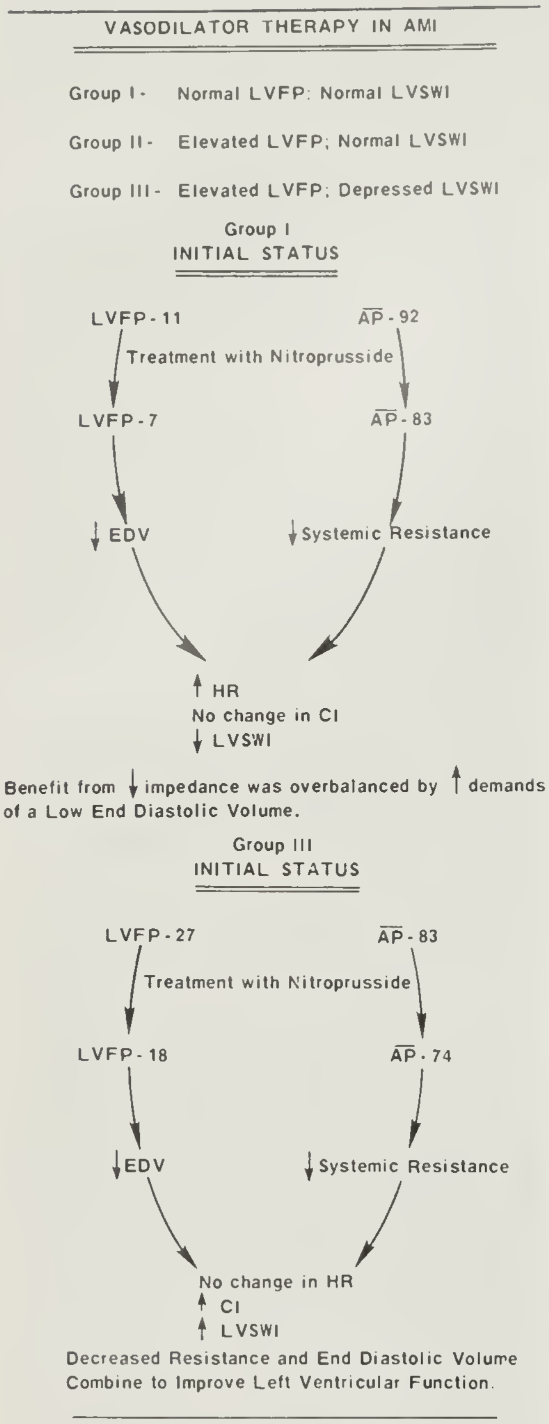
creases in mental status and urine flow, suggested that the vasodilator therapy had produced a more favorable balance between myocardial oxygen supply and demand.

Chatterjee et al. studied the hemodynamic and metabolic effects of nitroprusside and phentolamine in 39 patients with acute myocardial infarctions.[4] Three groups of patients were defined:

(1) Normal left ventricular filling pressure (LVFP); normal left ventricular stroke work index (LVSWI).
(2) Elevated LVFP; normal LVSWI.
(3) Elevated LVFP; depressed LVSWI.

In the first group of patients, the heart rate increased from 88 to 99 beats/min., the mean arterial pressure fell from 92 to 83 mm Hg., and the left ventricular filling pressure dropped from 11 to 7 mm Hg (Fig. 7). Accordingly, the system resistance was less, but there was essentially no change in the cardiac index and a decrease in the left ventricular stroke work index from 36 to 30 gm.-m/m². In this group of patients, despite a reduction in impedance, enhancing forward flow, the concomitant decrease in preload diminished the end-diastolic volume to such a degree that an increase in heart rate was necessary to maintain a cardiac index. There were disparate results on the parameters determining myocardial oxygen consumption.

In the third group of patients, the heart rate was constant. The mean arterial pressure was lowered from 83 to 74 mm Hg, and the filling pressure dropped from 27 to 18 mm Hg. As in the first group, the systemic resistance decreased, but in this case, the resultant effect on cardiac performance was an improvement in cardiac index and an increase in stroke work index from 14 to 18 gm-m/m². In this group of patients, the decrease in preload and the reduction in afterload gave a combined bene-


VASODILATOR THERAPY IN AMI
Group I - Normal LVFP; Normal LVSWI
Group II - Elevated LVFP; Normal LVSWI
Group III - Elevated LVFP; Depressed LVSWI
Group I
INITIAL STATUS
LVFP - 11
AP - 92
Treatment with Nitroprusside
LVFP - 7
AP - 83
↓ EDV
↓ Systemic Resistance
↑ HR
No change in CI
↓ LVSWI
Benefit from ↓ impedance was overbalanced by ↑ demands of a Low End Diastolic Volume.
Group III
INITIAL STATUS
LVFP - 27
AP - 83
Treatment with Nitroprusside
LVFP - 18
AP - 74
↓ EDV
↓ Systemic Resistance
No change in HR
↑ CI
↑ LVSWI
Decreased Resistance and End Diastolic Volume Combine to Improve Left Ventricular Function.

Chatterjee et al., Circulation 48 1183 1973

Fig. 7

ficial effect leading to an overall improvement in left ventricular performance and significant decrease in myocardial oxygen consumption (Fig. 7).

This study demonstrates the importance of carefully selecting the patients to whom vasodilator therapy is given. Some patients are not benefited and in fact are made worse with this treatment. Patients, as in group 1, with normal or low filling pressures, in whom increased venous capacitance decreases the end-diastolic volume to the extent that an increase in heart rate is necessary to maintain cardiac index, do not benefit. In these patients, the decrease in stroke volume brought about by the smaller end-diastolic left ventricular volume cancels the augmented stroke volume generated by the reduced impedance.

*To be continued*

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*Correspondence*

# Acupuncture in Arizona

Editor,
*Arizona Medicine*

The Arizona Acupuncture Associati of Physicians and Surgeons was esta lished in 1972 by Arizona physicia interested in clinical research. In A gust 1972 the A.R.E. Clinic, Ltd. spo sored the first Acupuncture Symposiu for Clinicians held in the United Stat Nearly 100 physicians attended th meeting, and from this group 15 beg meeting on a regular basis, discussi acupuncture, its theory, philosophy a practice, observing patient response a treatment, sharing knowledge a maintaining an up-to-date account progress in the application of acupu ture and Chinese medicine througho the United States. Since its beginnir the Acupuncture Association has he other symposia and workshops, inviti guest lecturers from the scientific co munity who have spoken of strides a understanding in new clinical applic tions of acupuncture therapy. The cu rent membership of the Association cludes nearly every specialty in t medical profession.

The purpose of the Acupuncture As ciation of Physicians and Surgeons is act as an educational organization other physicians and to act as a fo point of interest for those physicians a surgeons who find in the art and scier of acupuncture a possibility of caring the patient in a more comprehensi manner.

Traditional Chinese medicine proaches the concept of health and d ease from a somewhat different persp tive than Western medicine, and ideas and terminology may seem stran unfamiliar to most Western physi- ans. Chinese medicine is founded on a ilosophically-based system of feeling ıvolving unity and harmony of the in- vidual physically, mentally and spiri- ıally. Because of its lack of a scientific ıse many physicians, while interested the potential applicability of acu- ıncture, are not sure how it could be cluded in their own medical practice, ıd few have access to formal training ograms.

It is hoped that this situation will ange as acupuncture is more oroughly investigated in this country. vestigations are now being conducted many medical schools in the United ates, and most physicians who have riously investigated acupuncture ree that it is a safe and effective form therapy, although there is still dis- reement as to how it works.

Acupuncture practice is regulated by th legislative statutes and rulings of e Medical and Osteopathic Boards of edical Examiners. We the physicians e currently under ruling to report to e Board of Medical Examiners quar- rly on the results of Acupuncture erapy for each patient under treat- ent. The purpose of this is to create a ATA BASE from which The Board of edical Examiners can compile statis- s on acupuncture's therapeutic use- lness or lack of usefulness.

Fewer reports have been submitted ch year since investigations of acu- ncture was begun. The Acupuncture sociation of Physicians and Surgeons .A.P.S.) wishes to encourage the Med- l Community to report quarterly. In is way standards of practice as well as iciency of treatment can be developed d the sphere of acupuncture's poten- l in Medicine can be determined.

The Acupuncture Association of Phy- ians and Surgeons is working and rning in hopes of filling the gaps in current therapy of pain, chronic or- nic and functional disorders, psycho- natic medicine and anesthesia. Phy- ians interested may contact the Sec- ary for application and membership ormation.

Alan M. Abromovitz, M.D.
President, Acupuncture Association of Physicians and Surgeons

Augustus E. Stewart, D.O.
Secretary, Acupuncture Association of Physicians and Surgeons
1801 W. Indian School Road
Phoenix, Arizona

## In Defense of Bizarre Behavior

Re: Being sick, female, between ages 30-40:

If a female of the above age is sick, she must demonstrate to a physician that:

1. She is not just depressed and bored.
2. Her blood remarkably deviates from the broad (relatively) spectrum recognized as normal.
3. She has a palpable tumor (larger than a black-eyed pea . . . lentil?)
4. Excessive bleeding must be verified (save it . . . at least 2 pints, metric!)
5. She may have a deviant heart (just a deviant is not enough).

If there is no conclusive proof from the various tests, she must support her conclusion, i.e., that she is physically ill, with a slack-jawed, joyless look, some well-placed moans and groans and tears and a studied lack of interest in or concern for her surroundings and for other people. There is a risk involved in the acting, because certain behavior can be categorized as that of a depressed person, and once you get that label, baby, it's Librium City from there on! If she does show life, enthusiasm, because actually the body is really just a shell for the spirit, she may be diagnosed as having BIZARRE behavior. Well, what does a truly bizarre person do? I've been bizarre for years. And it has been hilarious lots of times. I remember a teacher screaming, "You're nothing but a clown!" Yes, it's true. My gift to everyone is the joy of laughter. I'm poor in material things, but I've lots to share. That teacher's greatest joy was a hot dog and beer at the ball park, and I'm not talking about the living, moving kind at the Banque! Well, everybody's different, and I usually don't mind being different. I enjoy lots of things which others miss . . . if you appreciate weeds (no pun intended), there are a lot available everywhere; some only appreciate pure Dichondra, St. Augustine or Bermuda. (Although Bermuda can usually get a reaction from lots of people!) Back to relevancies: Why do I have to stop smelling the roses, enjoying the treasures within everyone I meet, having a laugh at least every five minutes if possible? Because if I am as sick as I feel, I'd just as soon enjoy every minute, thank you!

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NEWS FLASH!!

I have a great treatment which I discovered while lying in the shade by the pool. Because I feel worse when hot (well, in the temperature respect, like 108° in the shade, celibate), I put a package of frozen French-style green beans on my chest. Peas and corn work well, too, but they all thaw eventually (I don't know which thaws more slowly and that information was not on the side of the package), so it's handy to switch off as the freezer is just around the corner. I don't know how my family will fare when they eat them. My husband will probably love them all! I will use margarine in the future; not kinky, just safer to refreeze and serve! I noticed that Gaylord fits a lot better than Parkay. Really did make a difference.

Observation: Funny how there are no ugly old doctors around these days. Retired at fifty, I guess. Or dead of overwork and overstress. Imagine, you throw a girdle away after two years, and doctors are under a lot more pressure and they are expected to last indefinitely. I guess if they marketed a girdle that constantly rebuilt itself and earned money besides, you'd have a sure winner! My neighbor observed that if you could make a doctor to hold all your blubber in, you'd have a sure winner, too! She's the one who' going to be my character witness. Yes, I am a character, but harmless, and lots of fun most of the time. (Except when trying to communicate with doctors . . . maybe I should stick to girdles . . . that's better than sticking in them, which, in this weather is definitely sticky!)

Name withheld by request

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The Editor
*Arizona Medicine*
Dear Sir:

Two items in the April, 1977 issue of Arizona Medicine struck me as examples of the inconsistent approach we take as we evaluate our methods of treating patients in what we hope will be the most beneficial manner.

Since I often read periodicals from back to front, the first of the two matters I encountered was the notice in ArMA Reports of the decision to actively non-support the House Bills concerning Laetrile. Holding no brief for Laetrile and knowing the opposition is based on lack of documentation of effectiveness, this notice caused no particular reaction on my part.

As I continued to leaf through the issue, I came across the paper "Advances in the Treatment of Lung Cancer Interstitial Implants." (I suspect a colon was omitted from the title.) Seeing all the outward evidence of a scientific paper, I decided it should be worthwhile reading, especially since the title proclaimed, "Advances." I first looked at the table and found a jumbled arrangement. After trying to sort this out by referring to the text, I decided this was impossible since the percentages in the table and those in the text differ.

Having despaired of this approach, I tried to determine what the author means by "local control" since this is what he appears to consider to be the advantageous effect of the treatment. To my disappointment, I found no definition. While making this effort, I also sought some experimental results showing a difference in course or outcome among patients treated by implantation compared with patients not so treated. Again, I was disappointed. The best I could do was to find the author's statement, "the radiation oncologist can convert an exploratory thoracotomy into a palliative and possibly curative approach to an unresectable tumor." Yet no data was presented to support this optimism.

By this time, my thoughts had wandered back to Laetrile.

Sincerely,
Joseph A. Hawkins, M.D.

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Response from author.
Editor, *Arizona Medicine*
Dear Dr. Block:

Dr. Hawkins and I have at least one thing in common and that is we both found a jumbled table. This was certainly due to a printing error and was not intended to represent the overall situation. In fact, I am unable to make much sense out of the table as presented and I know the data. Below is the table as it should have appeared. The percentages at the bottom reflect % control rate for radium, 36%; iridium, 50%; and iodine 125, 63%, respectively, suggesting there is an improved biological effect with $I^{125}$.

**Table 7**
**Local Control vs Stage and Radionuclide**

| | Patients Controlled/Treated | | |
|---|---|---|---|
| Stage (AJC) | $^{222}Rn$ | $^{192}Ir$ | $^{125}I$ |
| I | - | 4/5 | 5/6 |
| II | 1/2 | 4/4 | 2/2 |
| III | 18/51 | 22/51 | 26/44 |
| Total | 19/53 | 30/60 | 33/52 |
| Percentage | 36% | 50% | 63% |

I think it is most important, howev for Dr. Hawkins to recognize that t use of interstitial implantation for lu cancer is definitely not being touted a new cure-all for this serious disease. T mere fact that most of these patie will succumb to metastatic disease, su gests that any local measure of tre ment in and of itself, is doomed to fa ure. However, and this was the purp of the article, there are certain clini situations where aggressive local tre ment may be of great benefit to t patient. In patients with chest wall vasion and local pain who are not sectable at surgery, the addition of t local measure can offer palliation of t patient's symptoms. In those patie who are not medically suited for pne monectomy, as stated, there is a pote tial for cure if the local lesion is co trolled and the patient does not devel metastatic disease. This is the sa reasoning used when a patient is su jected to lobectomy or pneumonector for lung cancer. Thus, the reason the are no data comparing interstitial i plantation with other methods of trea ment, is that this was not the purpose this presentation.

Finally, the letter writer asks for e perimental results "showing a differen in course or outcome among patien treated with implantation compar with patients not so treated." I am u clear whether he is suggesting that p tients receive no therapy whatsoever, whether he is asking for comparis with external radiation or chemot erapy. For comparison with chemot erapy, the local control of disease unmatched in Stage 1; 9 of 11 patien have had the implanted tumor co trolled which was the objective of i plantation. I am unaware of any da suggesting chemotherapy or extern radiation can approach this high level local control. Extremely high doses radiation as mentioned are required achieve control in bulky tumor mass and frequently these high doses cann be delivered with external radiation areas of the lung either due to problen with destruction of interposed norm lung tissue, or due to proximity of sens tive organ systems like heart or spin cord. Obviously, patients who do n receive any therapy cannot have a control of their disease. Patients who a asymptomatic with growing neoplas by definition, will eventually becon symptomatic. Therefore, to leave a p tient with potentially severe sympton ducing disease untreated is unten- e.

cerely,
t J. Rossman, M.D.

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il 29, 1977
The Editor
zona Medicine
r Editor:

o you want to know who is going to erit the Earth? It's the lawyers, that's ! Get a load of this:

ast year in California, Workman's npensation *litigation* cost more than s paid out to doctors to *treat* injured kers! Such litigation is a $200 mil- annual business in California.

ccording to a bulletin from the Cali- nia Workers' Compensation Institute ed March 1st, 1977, which John ng made available to me, average al expense was $1691.00 on each case. ltiply this by the 107,000 applica- ns expected to be filed this year, plus California Workers' Compensation titute's budget, and you are at the 0 million mark. At the risk of ap- ring repetitious, that is more than s paid out last year to doctors to treat ured workers in that state!

t seems to me that these statistics uld put to rest the allegation that tors are the principal "profiteers from man misery." My calculator has con- ded from these figures that the Insti- es' budget is about $201,000 per year. e legal expense per case includes $633 defense costs, $424 in medical-legal enses, and a $594 fee to the appli- t's attorney. It's strange that we hear hing about what it costs the commu- y in legal fees in association with kness and injury. We hear only about w much the doctors charge and how reasonable are the hospital expenses.

he oft-repeated soothing reassurance t we "really should pay no attention the amount legal expenses represent ause such sums are merely a reflec- n of today's business costs and com- nitantly a reflection of inflation and times," reminds me of the fighter o was told between rounds by his nager while he was patching him up: on't worry, Champ, he ain't laid a ve on you!" Finally the "Champ" said, ell, I wish you'd keep an eye on that eree then, because somebody in there beating the hell out of me!"

ncerely,
ul B. Jarrett, M.D.

## *Editorials*

# The Shape of Things to Come

Typically, the incoming Presidents in past addresses have commented at this point concerning the overwhelming responsibilities attendant to the forthcoming year, and I certainly will not part from tradition. It is indeed an awesome situation. I approach this coming year with the feeling of great humility and with the hope of being able to continue your leadership along the superb lines to which you are accustomed. Certainly, Ed Sattenspiel, Bill Scott, Bill Payne, Phil Dew — to name only the most recent Presidents — have set such outstanding patterns of leadership that it seems almost impossible to emulate them. I can only say, that my maximum efforts will go forth; and perhaps, with the help of all of you, our Society will continue in its own progressive manner.

It is with a sense of pride that I assume this office as the first President of the Arizona Medical Association from Coconino County. It is interesting to note that there has never been another President from Coconino County in ArMA's 86 years of existence. This places another burden of responsibility on my shoulders. If I fail, it may be another 86 years before there's another President from Coconino County; and, I certainly don't want that to happen! Be that as it may, let me say that I am proud to be a member of the Coconino County Medical Society. I am proud to be a member of the Arizona Medical Association. I am also proud to be a member of the American Medical Association.

The Arizona Medical Association seems to be in vogue by having a President this year from a small community such as we have at the national political level. I can only say that I don't have any brothers, much less a brother named "Billy." If I did, I'd be inclined to leave him at home!

Coming as I do from an out-county, I feel much like a country boy coming to the big city; although that may qualify me as an expert — depending on your definition of an expert. One of the most common definitions — "An expert is someone from 50 miles away with slides." — doesn't qualify me as I didn't bring any slides. Perhaps I'm better described as an "X-Spurt"; "X" being the mathematical expression for an unknown quantity and "Spurt" being defined as a drip under pressure. That would make me "an unknown drip under pressure!" This may be a fairly accurate assessment at the present time.

It is true, I suppose, that I am under some pressure up here at the podium — but really no more so than all of you are out there in the audience. We are all under pressure already by the Federal Government as so vividly shown in the audiovisual program preceding Dr. Palmer's remarks. As those ropes continue to tie us ever tighter and the pressures and frustrations mount, we must become more and more mindful of Dr. Palmer's plea for unity. Truly, as Benjamin Franklin said, "United we stand, divided we fall."

Gentlemen, don't think for a minute that we aren't going to have many invitations to fall in the next four years. True, Mr. Carter and Mr. Califano at H.E.W. seemingly have given us a little breather while they work in their new Health Care Financing Agency (HCFA) to control health-care costs. Isn't that just what we need — another governmental agency? It reminds me of the quip about the three least credible comments in the U.S. today: (1) "There's a check in the mail," (2) "I'll respect you as much in the morning" and, (3) "I'm here from the Federal Government to help you!"

Seriously though, Carter's new agency makes sense as the cost-control piece in the jig-saw puzzle of National Health Insurance. We already have PSRO's, HSA's and the other necessary pieces shrewdly connived by the social planners in Washington to suddenly save the American Public from the horrible spectrum that they call "Escalating Medical Costs." With that will go the excellence in health care that we know and have struggled long and faithfully to develop and maintain. Doctor, which means healer and comforter of the sick, do you want this to happen?

If not, much will depend upon what you and I, individually, and we, collectively, do to affect the shape of things to come. We don't really know what actually will be the shape of things to come — but we certainly have some obvious clues. We have a labor Congress. We have a President committed to National Health Insurance. We have liberals screaming for change along constantly more socialistic lines; and we have rabble-rousers like Ralph Nader criticizing most all of the Establishment under the guise of consumer-advocacy. Along with these things we have a Federal Government and willing news media propagandizing the American Public. Ladies and Gentlemen, we cannot stand idly by and do nothing to help shape the future.

We must, I think, begin with a re-examination and reassessment of ourselves as individuals. We must re-examine ourselves as individual persons; and we must reassess our relationships to ourselves, our families, our patients, and our communities. We must, perhaps, redevelop our sense of self-confidence and equanimity. From this sound basis we must begin to become more assertive to our patients in our offices, and to our colleagues at the clinic and hospital levels. We must become more vocal in our position of patient advocates. We need apologize to no one for being interested in the well-being of our patients; as that is the real basis of our professional existence. Our patients need to know this; and the public needs to know this.

You will recall a recent Gallup Poll report which still tells us that doctors are the most respected group of professional people and the AMA the most listened-to professional group. Our patients are our friends and they are willing to listen to us; particularly when we are speaking on their behalf and in their defense. I would caution you all to be constantly mindful that no one is interested in hearing of the financial plight of all those fat-cat doctors. People want to know how contemporary issues, such as National Health Insurance, will affect them, their care, and their pocketbooks—and this message we can carry forcefully home to them. The bumper sticker."If you like the Postoffice, you'll love National Health Insurance" carries our message very succinctly.

With our new-found individual self-assertiveness, we must next approach our component County Medical Societies with the same sense of re-examination and re-evaluation. Aren't there more things that need to be done at the local level that the County Society should logically be engaged in or leading? Local issues must be faced at the local level. We must foster more cooperation, more communication and more effort among the members of our component County Societies. What better initial effort might be suggested than a concerted effort by each Society to solicit more new members? It's an educational thing to sell something, because by selling a product you learn a lot about that product.

We must, in turn, constantly reassess and re-examine our activities at the State Association level. We need suggestions and input from every individual member and every County Society in order to form the consensus that we need to direct our State Association efforts. This year we plan to stress communication and membership as our main goals. Again, statewide problems need to be faced by a statewide organization, and we need to continue our efforts in the field of malpractice changes. We need to further stress our ArMPAC membership recruitment program, because no one can deny that our past PAC activities helped us tremendously with the State Legislature. We must approach our apathetic colleagues and communicate with them that our darkest hours are soon forthcoming and that we need their help. As the HSA activities and PSRO activities affect more and more physicians, I'm confident more and more of our "Sleeping Jesus" colleagues will become more activated. We need a strong State organization and each and every one of us needs to put forth our maximum energy toward that goal.

Progressing the next step up the ladder, we must bring our strong County components and strong State organization around solidly behind our National organization, the American Medical Association. Without any fear of argument, there can be no doubt that our next crisis situation will be at the Federal level. Organized medicine, like the Federal Government, coalesces its widely divergent thoughts and considerations best in response to crisis situations. The planners of the Department of Health, Education and Welfare are responding to the largely conjectured-up "Health-Care Crisis;" and we in the AMA have to respond to the "Patient-Care Crisis" they will produce. Gentlemen, in Dr. Palmer's words, we need "Unity." This has never ever been more true than now.

We need solid unification of our profession, which we can obtain only with great effort and with constant communication with our cohorts. We need solid unification of our patients behind the cause, which is really their cause, which we can likewise obtain only with great effort and constant communication. This is not the time to hide our light under a bushel. Instead, it is the time to speak out loud and clear on the issues and how this affects our patients. I rememb quotation in the textbook we used speech course back in college. It said good speaker is an able man with so thing to say, saying it well." We h perhaps 200 able men and women r here in this room. You all certainly h something to say on behalf of your tients; and you can all say it well if decide to do it. My advice is to get and start talking before the clock r out on our excellent patient care syst our Nation's economy and, perhaps timately, democracy itself!

At this point, Ladies and Gentleme would be remiss in my duties if I did implore you to consider carefully matter of unified membership in y deliberations in the reference comm tees and forthcoming session of House of Delegates. Unity is absolu imperative at the present time. Ther no way we can afford ourselves the l ury of dropping our responsibility to patients at any level—be it Cou State or National. To be a dropout at of these levels shirks our duty to th patients affected at that particular le As I said before, local issues must faced at the County level, State issue the State level, and National issues the National level. Certainly the A can't do much for us in problems at County level. By the same token, County Society can't do much at National level—and that is where action is going to be. Anything to caus weakening of the AMA at this point i blow to quality health care. To rep Dr. Palmer's words for a third time, need now is for Unity.

With unity comes strength. W strength we can effectively combat so of the forces at play in our Society tod and thereby have our share of influe in "The Shape of Things to Come!"

**John F. Kahle, M.D.**
**President 1977–78**
**Arizona Medical Association**

## Arizona Medical Liability Review Panels

On March 7, Judge Robert Broomfie Presiding Judge of Superior Court Maricopa County, discoursed on t subject to the local county society.

Some of the important points wh he mentioned were:

There is no reporter present at th panels unless it is requested and paid by either the plaintiff or the defenda

The problem arose of what to do wh

ere are multiple defendants and this as resolved if there are multiple doctor fendants, each one of them has to have doctor of his specialty on the panel.

What happens if the defendant is one the health care field. Well, they have get one of the ancillary type people on e panel too, apparently, but if he is a ntist nothing happens because there no provision in the law for the dentist be represented on the panel.

Remember that the panel is to be comised of a judge, a lawyer and a phycian.

Any physician in Arizona may be lled upon to discuss with the plainf's lawyer, a prospective case which he bringing before the arbitration panel.

is came as quite a shock to some phycians I would guess, because the Board Medical Examiners has apparently put ery doctor in the state on the panel so at eenie-meenie-minee-mo, you may chosen at any time.

The question as to whether or not you e forced to testify if you discuss the se with the plaintiff's lawyer has not en resolved. As stated above, dentists e not represented on the panel; neither e podiatrists.

The Board of Medical Examiners gave list originally comprised of a small oup of physicians; now apparently it cludes all of the physicians practicing the state of Arizona; this applies to ysicians subject to panel call.

Since the proceedings or the result of e decision of the panel may be used in urt, it has never been resolved as to hether at the trail which may result, e names and vote of the panel are to disclosed.

In a ten month period there has been fty-five malpractice cases submitted to e panel. Eight were dismissed by mual agreement of the parties involved. ixteen were decided in favor of physians, five in favor of the patient claimant nd the others are still pending.

This makes it a three and one decision favor of the physicians in the cases at have come to panel so far.

It is not known to date whether the oluntary panels which were abolished ad anything to do with the way things e going now.

Physicians are impelled, when called pon, to serve on the panel. No one reeives any fee for discussing a case with lawyer at his request, but there is a aily fee for serving on the arbitration anel itself.

**John W. Kennedy, M.D.**

## The AMA Position

If we in organized medicine say "no" to any form of National Health Insurance, we're going to be outshouted, outdone—and perhaps undone—by the labor-liberal crowd that has a strong "yes."

Certainly the Carter Administration will have a "yes," once three preconditions are met. These preconditions are reorganization of the Department of Health, Education, and Welfare (already initiated), welfare reform (for which a task force has been named), and cost controls (as embodied in the proposed ceiling, or "cap," on hospital-cost increases).

Proof of the Administration's committment to NHI is furnished by HEW's appointment of an Advisory Committee on National Health Insurance Issues. The 29 public members include Edgar T. Beddingfield, M.D., chairman of the AMA Council on Legislation, but also two outspoken labor leaders—President Leonard Woodcock of the United Auto Workers and Bert Seidman of the AFL-CIO—plus other liberals.

In announcing the appointments, HEW Secretary Joseph A. Califano Jr. said NHI "is a cornerstone in the structure of the President's domestic policy."

So we can be on the lookout for the Administration to offer an NHI proposal next year—and strive to get it enacted before the 1980 elections.

This proposal, if not basically a facsimile of the Kennedy-Corman-labor NHI bill, is likely to defer to its principal elements—the way the 1976 Democratic platform did.

What is the best way—really the only way—to head off this danger?

Well, no less conservative a U.S. Senator than John G. Tower of Texas has stated, "The most viable means of avoiding the Kennedy-Corman version of socialized medicine is to oppose it with more reasonable alternatives."

And as Congressman Paul G. Rogers of Florida—an influential figure in health-care legislation—has said, "It is my view that to simply oppose legislation without offering alternatives rarely is an effective approach on Capitol Hill."

The American Medical Association's comprehensive health insurance measure is the reasonable alternative.

The AMA recognizes that most of the general public (the ultimate arbiter on the issue) wants an NHI bill. The majority, according to a recent Gallup Poll, want a form of it that is largely free of federal involvement and funding. A plurality—39 per cent of the people polled—want a version that tallies pretty much with the AMA bill.

The AMA measure would preserve the private thrust of care and its financing. It would depend principally on employer-employee contributions and apply federal funds only to the poor and jobless. These funds, mind you, would come from general revenue—not from any special levy, like the already runaway Social Security tax.

In short, here's a bill that would preserve our professional freedom while honoring the public's wants and needs. We can't let the labor-liberal forces have the NHI ball to themselves. We have to be on the field fighting for it—and fighting as a great, strategic team.

**AMA Public Affairs Division**

## *ArMA Reports*

**THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.**

### Maternal & Child Health Care Committee

The meeting of the Maternal & Child Health Care Committee of the Arizona Medical Association, Inc. held March 5, 1977 at 810 West Bethany Home Road, Phoenix, Arizona, convened at 1:32 P.M., William C. Scott, M.D., Chairman, presiding.

SECTION ON SERVICES FOR CHILDREN

**Medicaid**

Dr. Scott reported that the Board of Directors had tabled the committee's recommendation regarding Medicaid.

**Chairman**

Dr. Scott advised the committee that Jack H. Demlow, M.D. has accepted appointment as Chairman of the section.

### Intensive Care Newborn Transport Program

Drs. Meyer, Baum and Ehling reported on the status of the subject program including the following information.

This program began with concentrated planning in 1965 in an effort to reduce neonatal mortality (death among infants under 30 days of age). Prior to that time, Arizona ranked about 35th in neonatal mortality among the 50 states.

The initial program was designed around the small, sick infant born in outlying rural areas—that is, the areas where the child would get the least sophisticated medical care. These infants were brought to the larger hospitals in urban areas where more sophisticated medical care was available, and it was shown through that initial study that such care improved their survival. Accordingly, some Federal funds were earmarked in 1967 for a pilot program to transport and pay for the care of about 75 babies per year. The babies were brought to a metropolitan hospital in Phoenix where a neonatologist in a special center provided the care. In 1970 a detailed evaluation of the project experience was undertaken and completed by the Arizona State University Engineering Research Center. Results of the study revealed that there had been a marked improvement in infant mortality in the centers as compared with the state as a whole and with all other hospitals in the state. Based on the results of this pilot program, the State Legislature appropriated $500,000 for the program for fiscal year 1971. This additional appropriation allowed not only for the transfer and care of an additional 125 infants from rural areas but also for the necessary transfer and care of infants born in smaller hospitals in the two major metropolitan areas.

With greater cooperation of referring hospitals and physicians, with the development of two centers in each of the metropolitan areas, and with increased capacity in each of the centers, the number of infants which could be enrolled in the program was increased in FY 1973 to 800, in FY 1974 to 950, in FY 1975 to 1000 and in FY 1976 to 1250. The increase in the first three years was equally from metropolitan area hospitals in Phoenix and Tucson as well as outlying area hospitals; however, since FY 1974 the growth in numbers has essentially been in the transfer of infants from smaller hospitals in the metropolitan areas and from the transfer of high risk mothers to the intensive care hospital so that they may have a safer delivery and the infant can be provided expert care immediately. The Maternal Care Program has transferred a total of 495 mothers since its inception in late 1975 through a grant from a private foundation to the Arizona Medical Association and represents the ideal situation in a high risk mother-infant care program. The infants born to the mothers are often high risk and are then enrolled in the Newborn Program. The increase in in-hospital babies also reflected the increased number of babies being born in the state. Although there has been a gradual decline in the birth rate since about 1961, there has been a 23.4% increase in the number of babies born since the program started in 1966 and that increase occurred almost entirely as a result of immigration in the two metropolitan areas.

A number of statistics have been accumulated about the infants and their mothers. Decreased mortality has accounted for 295 babies who would have died in the last year to be alive. Prior to 1968, studies repeatedly demonstrated that 65% of the infants who were cared for in a regular or "premature" nursery were physically and mentally handicapped; 45% of all the infants were severely handicapped, generally requiring institutionalization. With the new methods and new treatment available in the intensive care centers, it has been shown through studies at the University of Arizona, the Florida State Health Department, St. Joseph's Hospital and the department's review of 1000 cases throughout the state that only 7-20% of these infants are abnormal and no more than 9% are severely handicapped and require institutionalization.

Using the conservative figure of 20% of infants that will be severely handicapped, we can estimate that 68 fewer children would end up severely handicapped in 1976 as compared to 1968. Considering the cost of institutionalization for those infants at a conservative $5000 per person per year (recent estimates on a study at Harvard estimated the cost of care in Massachusetts for a mentally retarded child in an institution at from $6840 to $9861 per person per year). Using the $5000 figure and using a 12-year survival—the average stay at Arizona Training Program at Coolidge (a 20-year survival was used in Massachusetts), one comes out with a figure of $4,080,000 for taking care of 68 of these children over the 12-year period. This $4,080,000, compared with the two-million-dollar projected expenditure to the program as estimated in our FY 1978 budget request, represents a considerable savings to the state and a dramatic demonstration of cost benefit. The number to be seen under the program in FY 1977 is estimated to be 1700 based upon the statistics from our first three months year and that figure also represents the estimated maximal need with the current birth rate and population.

Summarization of the cost of the program over the years indicates that the program grew from the initial appropriation in 1971 as follows:

| | |
|---|---|
| 1971 | $ 500,000 |
| 1973 | 780,000 |
| 1974 | 1,000,000 |
| 1975 | 1,130,000 |
| 1976 | 1,181,000 |
| 1977 | 1,146,131 |

The marked increase in the FY 78 request is due to the fact that the Department
changed the method of payment, based up
recommendations made after a study by t
Office of Economic Planning and Devel
ment, from a negotiated rate to paying r
sonable costs. Over the years, the payments
hospitals have taken 65% to 705 of the tot
appropriation, payment to physicians 15%
20%, and transportation 7% to 10%. Th
fiscal year, because of the different mech
nism of payment to hospitals, the hospit
percentage has gone up to 83% in the first
months; payment to physicians 13% a
transportation 3.7%. Average length of st
in the hospital has declined from 18.5 days
fiscal year 1973 to 15 days this year. T
average third party payment has increas
from only a small amount several years ago
68.7% of the total hospital bill this fiscal ye
Currently 6.6% of the payment is provided
families and the state provides 24.7%. In t
past year, the Crippled Children's Servic
program has provided $227,466 for the care
newborns who were eligible for the Crippl
Children's program.

In addition to the outcome cost benefit pr
sented earlier, there is another outcome
this program with respect to the health ca
delivery system. In the early years of t
program, it was apparent that the number
tertiary centers or newborn intensive ca
centers should be limited because of the co
of providing equipment and skilled people
work in these centers. For example, near
$300,000 was initially spent on necessa
equipment in one hospital to provide th
specialized care. Accordingly, only four ho
pitals in Arizona have been developed to gi
such care, and it is not anticipated that mo
will be needed in the forseeable futur
Limiting care to these four hospitals mak
efficient use of the equipment and allo
those health professionals who are skilled
working with these infants to do so on a fu
time bases, thereby maintaining their pro
ciency. In many states, there is unnecessa
duplication of staff and facilities at a great
cost in the end to the taxpayer or to the pers
who pays the insurance premium.

In summary, this program has grown fro
a pilot program in 1967 which transport
and paid for care for 75 babies to a major sta
program in 1971 where there was a sta
appropriation of $500,000 to transport a
take care of about 600 infants, and now to i
present size where 1300 infants were tra
sported and cared for in FY 1976 with a sta
appropriation of $1,181,000. The increase
the request for FY 1978 reflects funds need
to cover the increased caseload of appro
mately 1700 during the next year and also
different method of reimbursing hospitals
reasonable cost. The decreased mortali
which has occurred in Arizona in the last t
years has resulted in life for approximate
300 babies who would not have survived t
years ago. Also, based on the prelimina
studies of the development of the childr
who survice, an estimate can be made th
60-70 infants each year are spared from ha

| YEAR | ALL ARIZONA BIRTHS | NUMBER | % | M.D. | D.O. | R.N. | OTHER | LAY MIDWIFE |
|---|---|---|---|---|---|---|---|---|
| 1970 | 37,455 | 514 | 1.37 | 114 | 163 | 37 | 200 | 26 |
| 1971 | 38,343 | 551 | 1.44 | 155 | 194 | 21 | 181 | 19 |
| 1972 | 37,291 | 457 | 1.23 | 116 | 126 | 30 | 185 | 25 |
| 1973 | 37,872 | 324 | 0.86 | 83 | 40 | 32 | 169 | 16 |
| 1974 | 39,867 | 379 | 0.95 | 105 | 59 | 25 | 190 | 16 |
| 1975<br>rovisional) | 39,036 | 353 | 0.90 | 112 | 39 | 18 | 184 | 10 |
| 1976<br>an thru Aug ) | 25,699 | 245 | 0 953 | 90 | 22 | 12 | 119 | 2 |

g institutional care. Using that as a basis to stimate cost effectiveness we can estimate a avings of $4,000,000 at a cost of $2,000,000 er year. Lastly, the program has prevented uplication of facilities and has affected the fficient and maximal use of the skilled per-nnel required for these centers.

Dr. Baum reported on the present status of e appropriation process currently going on. e indicated that the requests for the 1978 udget would be $1,650,000 for hospital ser-ces.

SECTION ON MATERNAL SERVICES

**.B. 2171**

Dr. Cherny reviewed the subject bill man-ting insurance coverage for maternity ser-ces. It was reported that the bill has been ssigned to the House Health Committee and anking and Insurance Committee. It ap-ears that there is little chance of its passage is year.

**ome Delivery and Granny Midwife Cer-fication**

Dr. Scott introduced Francis Mast, R.N. of e DHS, and the Alternate Systems Mater-ty Committee who reviewed the history of idwives and home deliveries nationwide er the past few years. She pointed out that e whole concept of having births in the me has changed with many attendant oblems resulting from the increase of out of spital births. She pointed out that an in-easing number of births are not being re-rted. She went on to state that there are w several national groups promoting home rths reflecting the fact that consumers are anting to be in control of the birth process, stead of the professionals. One of the most ominent groups is called H.O.M.E. (Home iented Maternity Experience).

The following figures were provided by Mrs. ast. She again stated that these figures are ceptive because many births are not being ported to the vital statistics department.

The Committee reviewed the known Ari-na experiences of out of hospital births that ve ended up in the hospital with prob-ms.

IT WAS MOVED AND CARRIED TO ECOMMEND THAT THE ASSOCIATION EVELOP AND SUPPORT LEGISLATION HAT WOULD REQUIRE ALL BIRTHS BE EGISTERED WITHIN A SPECIFIC ERIOD OF TIME AND THAT SUCH EGISLATION CONTAIN A PENALTY FOR ON-COMPLIANCE.

IT WAS MOVED AND CARRIED TO RECOMMEND THAT THE ASSOCIATION WORK TOWARD REPEAL OF PRESENT STATUTES REGARDING LAY MIDWIVES.

**Maternal Mortality Study**

Dr. Susong reported on the status of the program indicating that he has two residents who will be the professional interviewers. The first meeting of the Committee was held October 16, 1976 at which time five cases were reviewed. A second meeting will be held in April, 1977.

He pointed out that getting reports of maternal deaths has been a severe problem because the current death certificate does not provide the necessary information.

It was reported that the death certificate is currently undergoing change and it was believed that the problem would be solved.

It was determined that, after consulting with Dr. Ehling, we would urge the D.H.S. to see that the proper information is included in the new death certificate form.

It was reported that ArMA has provided a $1,600.00 budget for the Committee's work in 1978.

SECTION ON PERINATAL SERVICES

**Arizona Perinatal Program**

Dr. Moore reported on the current status of the program.

It was suggested that the Executive Committee of A.P.P. consider the feasibility and desirability of creating a voluntary birth defects registry.

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The meeting of the Executive Committee of the Arizona Medical Association, Inc., held in Russell C Room, Hyatt Regency Hotel, Phoenix, AZ on Tuesday, April 26, 1977 convened at 7:04 A.M., Edward Sattenspiel, M.D., President and Chairman, presiding.

DEPARTMENT OF HEALTH SERVICES

Dr. Dandoy reported that Alexander Kelter, M.D. has been named Assistant Director of Disease Control.

She also indicated that should the laetrile legislation pass in its present form that she would probably be asking for help in developing a panel of cancer specialists to assist the Department of Health Services.

FUNDING HOUSESTAFF MEMBERS AT AMA MEETINGS

The request that the Association fund the expenses of two Housestaff Section members to AMA-Resident Physicians Section Business Meetings held in conjunction with the AMA's Annual and Interim meetings was discussed.

It was pointed out that the AMA records show that there are 113 Resident Physician members as of 12/31/76, and based on that figure, Arizona is allotted two delegates to the AMA-Resident Physicians Section Business Meeting. The Arizona Medical Association records for 12/31/76 shows the Housestaff Section membership at 91. The difference of 22 are "direct" members of the American Medical Association.

IT WAS MOVED AND CARRIED TO APPROVE FUNDING FOR TWO HOUSESTAFF SECTION MEMBERS AT THE 1977 ANNUAL MEETING AND THE 1977 INTERIM MEETING OF THE RESIDENT PHYSICIANS SECTION ONLY.

IT WAS MOVED AND CARRIED TO APPROVE FUNDING TO FUTURE MEETINGS OF THE RESIDENT PHYSICIAN SECTION ON THE BASIS OF ONE FOR EACH 100 OR LESS MEMBERS OF THE HOUSESTAFF SECTION OF THE ARIZONA MEDICAL ASSOCIATION AND FUNDING FOR A SECOND WHEN THE MEMBERSHIP OF THE HOUSESTAFF SECTION OF THE ARIZONA MEDICAL ASSOCIATION REACHES 101.

EXECUTIVE SESSION

Following the conclusion of an executive session called for the purpose of discussing personnel matters, the following action was taken.

IT WAS MOVED AND CARRIED TO APPROVE A 7½% SALARY INCREASE FOR THE EXECUTIVE DIRECTOR AS PROVIDED FOR IN THE 1977 BUDGET WHICH WAS APPROVED BY THE HOUSE OF DELEGATES ON MAY 1, 1976 (RESOLUTION 9-76).

BOARD OF DIRECTORS AGENDA

The Committee reviewed the agenda of the Board of Directors meeting scheduled for 9 A.M., this date, and made various recommendations.

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BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association held in the Borein Room of the Hyatt Regency Hotel, Phoenix, Arizona, Tuesday, April 26, 1977, a quorum being present, convened at 9:13 A.M., Edward Sattenspiel, M.D., president and chairman presiding.

AUXILIARY

Mrs. Hoffman reported that:

"The Auxiliary has approximately 1,600 members to ArMA's 2,600 with 6 organized county auxiliaries to ArMA's 14 medical societies.

The Auxiliary has worked with about $46,000 including our scholarship and loan funds. Twenty-four thousand, two hundred and fifty dollars was raised by 4 of the county auxiliaries to help support many community service projects including assistance to the aged, child abuse centers, new medical centers building funds, food and clothing banks, a sexual assault center, a guidance clinic, and prothesis, braces, and crutches.

Ten thousand copies of the HEALTH CAREERS IN ARIZONA chart were printed for distribution to all high schools listing 40 medical and health related careers.

We have been busy and are pleased to have been able to report on some of these activities to you this year."

## BOARD OF DIRECTORS

**1977-78 Meeting Schedule**

IT WAS MOVED AND CARRIED TO APPROVE THE FOLLOWING SCHEDULE FOR BOARD OF DIRECTORS MEETINGS:

July 23, 1977, Saturday
September 24, 1977, Saturday
December 17, 1977, Saturday
February 25, 1978, Saturday
April 25, 1978, Tuesday, Annual Meeting
April 29, 1978, Saturday, Annual Meeting

**BOMEX Lease**

IT WAS MOVED AND CARRIED TO APPROVE A LEASE EXTENSION FOR BOMEX FROM 7/1/77 THRU 6/30/78 AT THE RATE OF $6.00 PER SQUARE FOOT, SUCH LEASE TO INCLUDE A ONE-YEAR OPTION THRU 6/30/79.

**Nathan vs. JUP and MICA**

The chairman reported that Judge Robert O. Royston dismissed the subject case which challenged certain aspects of H.B. 2001—RECEIVED.

**Federal Trade Commission**

Counsel reported on the FTC Subpoena served upon the Association in regards to Group Health of Arizona—Pima Care and Blue Cross/Blue Shield Separation. Responses to the subpoena have been made (4/11/77) and the matter is still pending—RECEIVED.

**Federal Election Commission**

Legal counsel reviewed the requests made by the FEC for information relating to ArMPAC, AMPAC, and ArMA and their interrelationships noting that they, the FEC, seem to be on a fishing trip of some type—RECEIVED.

**BOMEX Appointments**

It was reported that the following have recently been appointed to BOMEX:

Albert Eckstein, M.D.
Arthur N. Lindberg, M.D.
Phillip Z. Saba, M.D.

## EXECUTIVE COMMITTEE

**Membership Classification Changes Approved**

**Cochise County Medical Society**

(a) Edmond F. Glow, M.D.—Active to Associate—Account Disabled—Dues Exempt—Effective 1/1/77

**Maricopa County Medical Society**

(a) William H. Bickle, M.D.—Active to Associate—Account Illness—Dues Exempt—Effective 1/1/77

(b) Louis H. Bos, M.D.—Service to Associate—Account Retirement—Dues Exempt—Effective 1/1/77

(c) Florian R. Rabe, M.D.—Active to Associate—Account Retirement—Dues Exempt—Effective 1/1/77

(d) G. Lee Sandritter, M.D.—Active to Associate—Account Illness—Dues Exempt—Effective 1/1/77

(e) Antonina J. Sidorowicz, M.D.—Active to Active Over 70—Account Age—Dues Exempt—Effective 1/1/77

(f) Robert L. Maresca, M.D.—Active to Associate—Account Retirement—Dues Exempt—Effective 1/1/77

**Pima County Medical Society**

(a) Howard R. Lawrence, M.D.—Active to Associate—Account Retirement—Dues Exempt—Effective 1/1/77

(b) Robert T. Kearney, M.D.—Service to
sociate—Account Retirement—Dues
empt—Effective 1/1/77

(c) George R. Nash, M.D.—Service to Aff
ate—Account Out of State—Dues Exemp
Effective 1/1/77

(d) C. Robert Schmidt, M.D.—Active to Af
iate—Account Out of State—Dues Exemp
Effective 1/1/77

## FINANCE COMMITTEE

**Building Cost, Cash Reserves and Building Assessment Collections**

Mr. Robinson reported on the subject m
ter as follows:

"At the 2/26/77 Board of Directors meeti
a request was made for a review of the bui

| AS OF | CASH RESERVE OR (DEFICIT) | SPENT ON BUILDING, LAND AND FURNITURE |
|---|---|---|
| 4/27/68 Resolution 6 adopted | $347,867.00 | –0– |
| 12/31/68 | 307,499.00 | $ 40,368.00 |
| 12/31/69 | 91,448.00 | 200,375.00 |
| 12/31/70 Original Cost when opened | (54,640.00) | 359,771.00 |
| 12/31/71 | (75,586.00) | 373,135.00 |
| 12/31/72 | (57,485.00) | 387,998.00 |
| 12/31/73 | (45,677.00) | 394,619.00 |
| 12/31/74 | (76,688.00) | 396,679.00 |
| 12/31/75 | (75,761.00) | 449,689.00 |
| 12/31/76 | (96,730.00) | 478,535.00 |

Second, the building fund assessment by Resolution 6 has generated $309,720.00 in
following fashion:

| DURING THE YEAR ENDING | AMOUNT COLLECTED |
|---|---|
| 12/31/68 | $103,385.00 |
| 12/31/69 | 20,582.00 |
| 12/31/70 | 23,030.00 |
| 12/31/71 | 23,683.00 |
| 12/31/72 | 25,140.00 |
| 12/31/73 | 24,405.00 |
| 12/31/74 | 25,885.00 |
| 12/31/75 | 31,762,00 |
| 12/31/76 | 31,848.00 |
| | 309,720.00 |
| Average of last three years | $ 29,832.00 |

SUMMARY FACTS:

| | |
|---|---|
| A. The "original cost" of the building at 12/31/70 | $359,771.00* |
| Additions to the cost since opening | 118,764.00 |
| The "total cost at 12/31/76" (not depreciated) | $478,535.00* |
| B. Difference between "original cost" and assessments collected thru 12/31/76 | $ 50,051.00 |
| C. Difference between "total cost at 12/31/76" and assessments collected thru 12/31/76 | $168,815.00 |

*Cost of building includes:

| | 12/31/76 | 12/31/70 |
|---|---|---|
| Land | $ 30,050.00 | $ 30,050.00 |
| Land Improvement | 10,264.00 | 7,451.00 |
| Building | 285,842.00 | 285,842.00 |
| Building Improvement | 74,869.00 | –0– |
| Furniture & Equipment | 77,510.00 | 36,428.00 |
| | $478,535.00 | $359,771.00 |

costs, cash reserves and building assessnt collection to be used as background ormation to assist in the decision making cess as it relates to the policy of having all w members pay the assessment.

irst, a review of our "Cash Reserve or ficit)" position since 4/27/68 which is the e Resolution 6 was adopted and put the ilding program into motion. *Please* keep in nd that the building expenses are only one tor, albeit a significant one, of many facs which affect the cash reserves of the sociation. Your Association's activities ve grown threefold between 1968 and 1976. e measure of that growth is a comparison the 1968 operating budget of $239,508.00 h the 1976 operating budget of 74,234.00.

ome "IFS" to help put the matter into spective – not intended to be all inclue:

. If "original cost" is to be recovered before we drop the assessment it will take approximately **1.67** years at $29,832.00 per year.

2. If "original cost" and "Cash Reserves at 4/27/68" are to be recovered before we drop the assessment it will take approximately **23.72** years at $29,832.00 per year.

3. If "total cost at 12/31/76" is to be recovered before we drop the assessment it will take approximately **5.66** years at $29,832.00 per year.

4. If "total cost at 12/31/76" and "Cash Reserves at 4/27/68" are to be recovered before we drop the assessment it will take approximately **27.70** years at $29,832.00 per year.

### RECEIVED FOR INFORMATION

**ancial Statement**
**r Period Ending 3/31/77**

r. Clymer reviewed the subject financial tement and responded to question – REIVED.

### HEALTH MANPOWER COMMITTEE

he Board reviewed Dr. Kossuth's excellent ort on the Sixth Annual Arizona Rural alth Conference.

T WAS MOVED AND CARRIED TO MMEND DR. KOSSUTH FOR THIS EXLLENT REPORT.

### LEGISLATIVE COMMITTEE

Ir. Barnett reviewed the current status of merous bills before the Arizona Legislae for the information of the Board – REIVED.

### MALPRACTICE INSURANCE CRISIS COMMITTEE

**sessment Extension**

motion to extend the $100 malpractice sessment to include all new members was feated.

### MATERNAL & CHILD HEALTH CARE COMMITTEE

**gistration of Births**

Dr. Scott reviewed the present status of law ating to registering births and the probs that are being created under the present tem which does not require such registration at or immediately following birth.

IT WAS MOVED AND CARRIED THAT THE ASSOCIATION DEVELOP AND SUPPORT LEGISLATION THAT WOULD REQUIRE ALL BIRTHS BE REGISTERED WITHIN A SPECIFIC PERIOD OF TIME AND THAT SUCH LEGISLATION CONTAIN A PENALTY FOR NON-COMPLIANCE.

**Lay Midwives**

Dr. Scott explained the problems by lay midwives attending high risk pregnancies and births and the current statutes permitting lay midwives in Arizona.

IT WAS MOVED AND CARRIED THAT THE ASSOCIATION WORK TOWARD REPEAL OF PRESENT STATUTES REGARDING LAY MIDWIVES.

### MEDICAL ECONOMICS COMMITTEE

**Blue Shield Letter of 2/11/77**

The subject letter which included the following recent decisions of the Blue Shield Board of Directors was discussed at length:

1. A participating physicians' list will be printed and distributed to all group leaders and to individual contract holders upon request. If you desire to have your name, address and specialty listed in the booklet, which will be distributed about April 30, you should determine to sign up as a participating physician no later than March 15. A form is enclosed for your use if you are not participating.

2. Effective April 1, the Plan will discontinue writing checks jointly to the non-participating physician and the subscriber, and will pay only the subscriber. This will result in reducing Blue Shield's administrative procedures and ultimately speed up claims payments.

3. A committee of the Board has been directed to study development of incentives for participating physicians to conduct minor surgeries and other procedures in their own offices which may currently be conducted in other facilities.

4. Staff was introduced to develop means to improve identification of particpating physicians and to study the possibility of providing additional services to said participating physicians. Studies are now underway to make positive recommendations to the Board.

Legal counsel advised of the legal pitfalls possible if this Association took any official action on this matter.

IT WAS MOVED AND CARRIED THAT AFTER REVIEW OF THE FEBRUARY 11, 1977 LETTER FROM MR. FOSTER, THAT THE ASSOCIATION TAKE NO ACTION AND MAKE NO FINDINGS AS TO THE MATTER DISCUSSED THEREIN, FOR THE REASON THAT IT IS NOT WITHIN THE PURVIEW OF ACTIVITIES APPROPRIATE TO THE ARIZONA MEDICAL ASSOCIATION.

### MEDICAL EDUCATION COMMITTEE

**Conference on State Continuing Medical Education Chairmen**

IT WAS MOVED AND CARRIED TO APPROVE PARTICIPATION IN AN EFFORT TO ESTABLISH DIRECT FORMAL REPRESENTATION OF STATE CME CHAIRMEN ON THE LIAISON COMMITTEE FOR CONTINUING MEDICAL EDUCATION THROUGH A CONFERENCE ON STATE CONTINUING MEDICAL EDUCATION CHAIRMEN.

**Deadline for Reporting CME Activities**

IT WAS MOVED AND CARRIED THAT THE DEADLINE FOR REPORTING CONTINUING MEDICAL EDUCATION ACTIVITIES BE ESTABLISHED AS FEBRUARY 15 OF THE YEAR FOLLOWING DUE DATE.

**Hugh C. Thompson, M.D. CME Study**

IT WAS MOVED AND CARRIED THAT THE PROPOSED CONTINUING MEDICAL EDUCATION STUDY OF HUGH C. THOMPSON, M.D. BE ENDORSED BY ArMA UPON PRESENTATION BY DR. THOMPSON OF THE FINALIZED PROPOSAL.

**Non-compliance of CME Requirements**

IT WAS MOVED AND CARRIED TO GRANT AN EXTENSION OF ONE YEAR TO CHARLES R. LINDSAY, D.O. FOR TIME TO COMPLETE HIS CME REQUIREMENTS.

IT WAS MOVED AND CARRIED TO DROP JAMES A. SCHUMACHER, M.D. AND RICHARD J. TOLL, M.D. FROM MEMBERSHIP FOR REASONS OF NON-COMPLIANCE OF THE CME REQUIREMENTS.

### PUBLISHING COMMITTEE

**Continuation of Arizona Medicine**

IT WAS MOVED AND CARRIED TO CONTINUE PUBLICATION OF *ARIZONA MEDICINE* AND TO SUPPORT RESOLUTION 6-77 THAT WILL BE PRESENTED TO THE HOUSE OF DELEGATES THIS YEAR.

### CORRESPONDENCE

**Auxiliary Letter 3/30/77**

Mrs. Reno's letter thanking the Board for its $1,200 1977 contribution was received.

**Merlin K. DuVal, M.D. Letter 2/28/77**

Dr. DuVal's letter expressing appreciation for the placque presented to him for his participation in the *Medical Opinion* television program was received.

**Raymond T. Holden, M.D. Letter 3/21/77**

Dr. Holden's letter acknowledging receipt of our $100 contribution to the Northwestern University Medical Association Management Scholarship Fund was received.

### OTHER BUSINESS

**Medicare Program Review Team in Arizona**

Dr. Reed reviewed the request from Mercia Leton Kahn, Regional Medicare Director, for suggestions of people who might serve on the subject team.

IT WAS MOVED AND CARRED TO SUBMIT THE NAMES OF ALL BOARD MEMBERS FOR MS. KAHN'S CONSIDERATION.

# Annual Meeting Pictorial Highlights

ARIZONA MEDICAL ASSOCIATION

## THE ARIZONA MEDICAL ASSOCIATION, INC. RESUME' OF THE HOUSE OF DELEGATES— 1977 ANNUAL MEETING

### APRIL 30, 1977

Adjourned meeting of the House of Delegates of the Arizona Medical Association, Inc. held in the Regency Ballroom of the Hyatt Regency Hotel, Phoenix, Arizona, Saturday April 30, 1977 convened at 8:17 A.M., Robert A. Price, M.D., Speaker of the House, presiding.

CREDENTIALS The Credentials Committee reported a quorum present and the House duly constituted.

ROLL CALL On the roll call 126 Delegates (and/or Alternates) and 23 members of the Board of Directors were present.

MINUTES Minutes of the meeting of the house of Delegates held May 1, 1976 were approved as distributed.

ELECTION OF OFFICERS The following officers were elected for a term of one year.

President-Elect, Richard L. Dexter, M.D.; Vice President, William E. Crisp, M.D.; Secretary, Derrill B. Manley, M.D.; Treasurer, John T. Clymer, M.D.; Speaker of the House, Robert A. Price, M.D.; Editor-In-Chief, Marshall B. Block, M.D.

The following were elected for the term January 1, 1977 to December 31, 1977.

Delegate to AMA, Edward Sattenspiel, M.D.; Delegate to AMA, W. Scott Chisholm, M.D.; Alternate Delegate to AMA, Bruce N. Curtis, M.D.; Alternate Delegate to AMA, William R. Myers, M.D.

ELECTION OF DISTRICT DIRECTORS The following District Directors were elected.

Central District Director, James M. Hurley, M.D. (1977-1980); Southeastern District Director, Edward R. Curtis, M.D. (1977-1980); Southern District Director, Richard S. Armstrong, M.D. (1977-1980); Southern District Director, Joseph S. Whaley, M.D. (1977-1979); Southern District Director, Jack M. Layton, M.D. (1977-1978); Southwestern District Director, James F. Martin, M.D. (1977-1980).

REFERENCE COMMITTEE ON RESOLUTIONS

Report of the Reference Committee on Resolutions as deleted, amended or as otherwise disposed of, adopted with the following actions taken on motions regularly made and carried.

**Resolution 1-77**

Subject: 1978 CALENDAR YEAR BUDGET OF INCOME AND EXPENSE

WHEREAS, It is customary for the House of Delegates to approve the Budget of Income and Expenditures for the next succeeding calendar year of the Arizona Medical Association, Inc.; therefore be it

RESOLVED, That the following Budget of Income and Expenditures for the calendar year 1978 be adopted:

| | INCOME | EXPENDITURES | |
|---|---|---|---|
| General Dept. | $706,450.00 | $543,640.00 | $162,810.00 |
| Committee Dept. | 82,265 00 | 98,000.00 | (15,735.00) |
| Annual Meeting Dept. | 63,300.00 | 53,950.00 | 9,350 00 |
| Publishing Dept. | 75,340.00 | 75,040.00 | 300.00 |
| TOTAL | $927,355.00 | $770,630 00 | $156,725.00 |

; and be it further

RESOLVED, That the annual dues of the Arizona Medical Association, Inc. be $250 for Active members, with $230 going to General Department Budget and $20 going to the Publishing Department Budget; and be it further

RESOLVED, That the Service Member dues be $62.50 with $42.50 going to the General Department Budget and $20 going to the Publishing Department Budget; and be it further

RESOLVED, That the Intern or Resident Active member dues be $25, with $5 going to the General Department Budget and $20 going to the Publishing Department Budget.

ADOPTED, APRIL 30, 1977

**Resolution 2-77**

Subject: MALPRACTICE INSURANCE AND HOSPITAL STAFF PRIVILEGES

WHEREAS, The Arizona Medical
sociation in its 1976 assembly of
House of Delegates supported the sta
ment of the Council on Medical Servi
of the American Medical Association
wit:

"Doctors should be encouraged
carry professional liability insura
that is adequate. However, this enco
agement toward self-protection sho
come from local medical societies
not as a result of coercion on the part
hospital. There are legal as well as p
fessional reasons why the evaluation
physician's qualifications for staff pri
leges should not, in effect, be delega
to an insurance company"; therefore
it

RESOLVED, That the Arizona Me
cal Association duly assembled by a
through its House of Delegates conde
and reject the action of any Arizo
Hospital which demands that attendi
physicians carry malpractice insura
as a prerequisite for hospital staff pri
leges; and be it further

RESOLVED, That this resoluti
when passed, be communicated to t
Arizona Hospital Association.

SUBSTITUTE RESOLUTION
ADOPTED AS AMENDED,
APRIL 30, 1977

**Resolution 3-77**

Subject: MANDATORY UNIFI
MEMBERSHIP WITH THE AME
CAN MEDICAL ASSOCIATION

REFERRED TO COMMITTEE
ON AMENDMENTS

**Resolution 4-77**

Subject: OPTOMETRISTS AND TH
USE OF DRUGS

WHEREAS, There continue to be le
islative proposals which would exte
the definition of the practice of optom
try beyond the application of optic
principles to embrace the use of dru
and medical treatment; and

WHEREAS, Optometrists have
valuable role in the correction of optic
error, they do not have the necessa
knowledge to protect the patient fro
potential drug hazards, nor possibly re
ognize threatening medical eye diseas
therefore be it

RESOLVED, That the Arizona Med
cal Association shall actively oppose a
legislation, the purpose of which is
directly or indirectly extend the autho
ity to practice medicine or surgery
optometrists.

SUBSTITUTE RESOLUTION
ADOPTED APRIL 30, 1977

**solution 5-77**
bject: SPECIALTY LISTING–
MEX ANNUAL MEDICAL DIREC-
RY
IEREAS, Requests have been
de by physicians that the Annual
dical Directory published by the Ari-
a Board of Medical Examiners indi-
e whether the individual physician is
tified by a specialty board; and
IEREAS, The Board of Medical
aminers request consideration of this
tter by the Arizona Medical Associa-
n; therefore be it
SOLVED, That the Arizona Medi-
Association recommends that the
nual Arizona State Medical Directory
blished by the Arizona Board of Med-
l Examiners include, along with all
rent data provided, whether the indi-
ual physician listed is certified by a
cialty board.

RESOLUTION ADOPTED
AS AMENDED,
APRIL 30, 1977

**solution 6-77**
bject: CONTINUATION OF ARI-
NA MEDICINE
HEREAS, The Publishing Commit-
of the Arizona Medical Association at
e request of the Board of Directors has
refully considered the role and finan-
l status of *Arizona Medicine;* and
HEREAS, A poll of the membership
the Arizona Medical Association was
dertaken as requested by the House of
legates and the poll indicated that the
ajority of members favored continua-
n of *Arizona Medicine* and the
embers' comments suggested that the
blishing Committee re-evaluate the
le, the format and cost of the journal;
d
HEREAS, After exhaustively re-
ewing the existing situation and
rious options, the Publishing Com-
ittee has made several recommenda-
ns to the Editorial Board both to im-
ove the content and to contain the cost
the journal and some of these changes
ve already been implemented; others
e pending; and
HEREAS, It is the unanimous con-
ction of the Publishing Committee
at *Arizona Medicine* will have an
er-increasing role in our everyday ac-
vities and in addition to its continuing
ucation role, *Arizona Medicine* will
lp us cope with the heightening social
d legal issues facing our society;
erefore be it
ESOLVED, That *Arizona Medicine* is
necessary and important contribution
to the physicians in our state and should be considered an asset rather than a liability of the Arizona Medical Association and should be retained.

RESOLUTION ADOPTED
AS AMENDED,
APRIL 30, 1977

**Resolution 7-77**
Subject: INDIGENT HEALTH CARE. MEDICAID

WHEREAS, The Arizona Medical Association House of Delegates in 1976 made its position in reference to Medicaid legislation quite clear; and

WHEREAS, The present plans for funding of Medicaid legislation have the potential of inappropriate or unaffordable expenditure; therefore be it

RESOLVED, That the Arizona Medical Association actively encourage our legislative bodies and state health department organizations to scrutinize Medicaid legislation in a manner which recognizes geographic needs and the adequacies or inadequacies of existing local systems of medical care.

SUBSTITUTE RESOLUTION
ADOPTED, AS AMENDED,
APRIL 30, 1977

**Resolution 8-77**
Subject: OPTOMETRY
NOT ADOPTED, APRIL 30, 1977
Combined with Resolution 4-77

**Resolution 9-77**
Subject: PHYSICIAN'S ASSISTANT AND NURSE PRACTITIONERS
NOT ADOPTED, APRIL 30, 1977

**Resolution 10-77**
Subject: INCLUSION OF HOUSE STAFF PHYSICIANS UNDER NATIONAL LABOR RELATIONS ACT

WHEREAS, The Arizona Medical Association House of Delegates at its annual meeting in April 1976 adopted the position that housestaff are employees with the rights of collective bargaining; and

WHEREAS, The National Labor Relations Board ruled in March 1976 that housestaff are students, in direct violation of the intent of the 1974 amendments to the National Labor Relations Act; and

WHEREAS, Congressman Frank Thompson has introduced H.R. 2222, which would amend the NLRA specifically to include interns and residents under its protection; and

WHEREAS, The American Medical Association Board of Trustees has agreed to support H.R. 2222 as well as to support efforts in court to overturn the NLRB decision of March 1976; therefore be it

RESOLVED, That the Arizona Medical Association support the Housestaff Section in its legislative and legal efforts to obtain statutory inclusion under the National Labor Relations Act as professional employees with rights of collective bargaining.

ADOPTED, AS AMENDED,
APRIL 30, 1977

**Resolution 11-77**
Subject: AMA NATIONAL HEALTH INSURANCE PROPOSAL (HR 1818, S.218)

WHEREAS, H.R. 1818 and S. 218 relating to National Health Insurance contain numerous features which are restrictive and arbitrary; and

WHEREAS, Some specific sections of the proposed bills, i.e. 32 (b) (1) and 32 (e) (5), run counter to the professional freedoms and necessary judgmental requirements of quality patient care; therefore be it

RESOLVED, That our national delegates be instructed to debate and rebut vigorously and appropriately those features of these bills which inhibit good medical practice.

SUBSTITUTE RESOLUTION
ADOPTED,
APRIL 30, 1977

**Resolution 12-77**
Subject: HEALTH CARE FOR THE INDIGENT

WHEREAS, The Arizona Medical Association has been and will continue to be vitally interested in the continuing effectiveness of programs for care of the indigent; and

WHEREAS, The currency of data relative to program effectiveness and cost accountability is subject to constant reappraisal; therefore be it

RESOLVED, That the Board of Directors of the Arizona Medical Association designate an appropriate committee and fund it so that data concerning present health care for the indigent in Arizona can be collected from individual counties for presentation and action at the 1978 annual meeting.

SUBSTITUTE RESOLUTION
ADOPTED,
AS AMENDED,
APRIL 30, 1977

**Resolution 13-77**
Subject: UNIFIED MEMBERSHIP
RESOLUTION REFERRED
TO COMMITTEE ON AMENDMENTS

**Resolution 14-77**
Subject: SEXUAL ACTIVITIES BETWEEN CONSENTING ADULTS
SUBSTITUTE RESOLUTION

TABLED,
APRIL 30, 1977

**Resolution 15-77**

Subject: PHYSICIAN EXTENDERS

WHEREAS, The Arizona Medical Association recognizes that there are presently registered nurses who are certified and are practicing as nurse practitioners of pediatrics and family practice in the State of Arizona; and

WHEREAS, There are other registered nurses who have been adequately trained as nurse practitioners of obstetrics and gynecology at the University of Arizona and in other states who are practicing as physician extenders in the State of Arizona but have not been certified; and

WHEREAS, The Arizona Medical Association recognizes the need for certified physician extenders (including physician's assistants, etc.) and believes that qualified persons with adequate training will improve the medical care of citizens of this State by permitting the availability of specialized care to many citizens who would not, otherwise, be adequately treated without their utilization; therefore be it

RESOLVED, That the Arizona Medical Association support legislation which places physician extenders under the control of the Joint Board of Medical and Osteopathic Examiners to provide adequate educational training and certification mechanisms for all physician extenders as well as assuring that these physician extenders have adequate physician supervision.

SUBSTITUTE RESOLUTION
ADOPTED,
APRIL 30, 1977

**Resolution 16-77**

Subject: 91 LIMIT ON HOSPITAL REVENUE

WHEREAS, The economics of a single sector of this nation's efforts to provide optimum health care cannot be isolated from those forces which produce rising costs in all industry; and

WHEREAS, The technologic advances in medicine must and will continue with concomitant unpredictable and to some degree, uncontrollable cost increases in personnel and equipment; and

WHEREAS, The predictability of cost control is dependent on a multitude of unknowns; therefore be it

RESOLVED, That the Arizona Medical Association actively support the Arizona Hospital Association in its posture with respect to the proposal to limit the amount of revenue which may be received, while steadfastly supporting the philosophy of cost effective health care delivery.

SUBSTITUTE RESOLUTION
ADOPTED,
AS AMENDED,
APRIL 30, 1977

## REFERENCE COMMITTEE ON AMENDMENTS

Report of the Reference Committee on Amendments as deleted, amended or as otherwise disposed of, adopted with the following actions taken on motions regularly made and carried.

*(Note: All bracketed, italicized words represent deletions; all fully capitalized words are new material.)*

**Resolution A-1-77**

Subject: CHAPTER VII—STANDING AND SPECIAL COMMITTEES SECTION 4—COMPOSITION AND DUTIES OF STANDING COMMITTEES (e) GRIEVANCE

RESOLVED, That Chapter VII, Section 4 (e) be amended to read:

(E) GRIEVANCE:—THIS COMMITTEE SHALL CONSIST OF THE PAST-PRESIDENT AS CHAIRMAN AND AT LEAST SIX MEMBERS. AT LEAST TWO MEMBERS SHALL BE APPOINTED EACH YEAR FOR A TERM OF THREE YEARS. ALL MEMBERS OF THIS COMMITTEE SHALL HAVE BEEN MEMBERS OF THE ASSOCIATION FOR AT LEAST FIVE YEARS PRIOR TO THEIR APPOINTMENT. NOT MORE THAN THREE MEMBERS, EXCEPTING THE CHAIRMAN, SHALL RESIDE IN THE SAME COUNTY.

THIS COMMITTEE MAY CONSIDER ANY COMPLAINT AGAINST A MEMBER OF THE ASSOCIATION WHICH DIRECTLY RESULTS FROM, RELATES TO, OR AFFECTS PROFESSIONAL ACTIVITIES OF THE MEMBER COMPLAINED AGAINST, AND EITHER:

(1) HAS BEEN CONSIDERED BY THE COUNTY SOCIETY CONCERNED OR A COMMITTEE THEREOF, THE DECISION OF WHICH SOCIETY OR COMMITTEE IS APPEALED TO THE BOARD BY ANY PARTY TO THAT PROCEEDING, OR

(2) WAS ONE IN WHICH THE BOARD TOOK ORIGINAL JURISDICTION PURSUANT TO CHAPTER VI, SECTION 6, OR

(3) THE COUNTY SOCIETY CONCERNED HAS REQUESTED THE BOARD TO ACT INITIALLY, HAVING SHOWN THE MATTER COULD NOT BE BEST HANDLED EVEN INITIALLY AT THE COUNTY SOCIE
LEVEL, AND THE BOARD HAS
FERRED SUCH CASE TO T
GRIEVANCE COMMITTEE FOR
VESTIGATION AND RECOMMEN
TION.

THE COMMITTEE SHALL MA
EVERY EFFORT TO CONSID
THOSE CASES IN WHICH IT
LIEVES IT HAS BOTH THE A
THORITY AND THE ABILITY TO
OF SUBSTANTIAL HELP TO T
PARTIES CONCERNED. HOWEV
THE COMMITTEE SHALL
DEAVOR TO AVOID TAKING THO
CASES WHICH CAN MORE EFF
TIVELY OR APPROPRIATELY
OTHERWISE RESOLVED A
THOSE CASES WHICH EITHER
READY ARE OR APPEAR LIKELY
SHORTLY BE BEFORE THE STA
BOARD OF MEDICAL EXAMINE
OR THE COURTS.

COMPLAINTS MUST BE MADE,
WRITING AND SIGNED BY T
COMPLAINANT, ACCOMPANI
WITH SUCH DOCUMENTARY E
DENCE AS THE CONPLAINA
MAY DESIRE TO SUBMIT. IN T
EVENT THE COMMITTEE DETE
MINES NOT TO CONSIDER T
MATTER, IT SHALL PROMPTLY
ADVISE THE COMPLAINANT
WRITING, RETURNING THE CO
PLAINT AND ANY EVIDENCE SU
MITTED. IF THE COMMITTEE D
CIDES TO TAKE JURISDICTION
THE MATTER, IT SHALL PROMPT
PROVIDE A COPY OF THE CO
PLAINT, TOGETHER WITH A
DOCUMENTARY EVIDENCE SU
MITTED, TO THE DEFENDANT. T
DEFENDANT, IN A WRITTEN A
SIGNED STATEMENT, MAY PR
SENT HIS DEFENSE, TOGETH
WITH ANY EVIDENCE HE M
WITH TO SUBMIT. FAILURE
SUBMIT SUCH STATEMENT OF D
FENSE WITHIN THIRTY DAYS FR
THE DATE OF RECEIPT OF T
COMPLAINT, AND A NOTICE
THIS PROVISION, WITHOUT GO
CAUSE SHOWN, SHALL BE CO
STRUED AS AN ADMISSION OF T
CHARGE MADE IN THE CO
PLAINT.

THE COMMITTEE SHALL MA
EVERY EFFORT TO CONDUCT
THOROUGH INVESTIGATION
THAT ALL OF THE FACTS R
QUIRED TO ARRIVE AT A CORRE
AND JUST RESULT ARE DEVE
OPED. THE COMMITTEE MAY PR

VIDE FOR A HEARING UNDER SUCH CONDITIONS AS IT DEEMS APPROPRIATE, AT WHICH THE DEFENDANT AND COMPLAINANT ARE INVITED TO APPEAR, IN THOSE CASES WHERE THE COMMITTEE BELIEVES THAT A HEARING WOULD BE HELPFUL TO IT IN ARRIVING AT A CORRECT DECISION.

THE COMMITTEE SHALL MAKE SUCH PROVISION AS IT DEEMS APPROPRIATE ADEQUATELY TO PROTECT THE ASSOCIATION AND PHYSICIAN CONCERNED FROM THE PATIENT'S RIGHT OF PRIVILEGED COMMUNICATIONS.

THE COMMITTEE SHALL THEN MAKE ONE OF THE FOLLOWING RECOMMENDATIONS TO THE BOARD:

(1) THAT THE DEFENDANT IS INNOCENT OF THE CHARGE OR THE CHARGE IS NOT A WRONG, AND THAT NO FURTHER ACTION BE TAKEN, OR

(2) THAT THE DEFENDANT IS GUILTY OF THE CHARGE: THAT THE CHARGE IS A WRONG, AND THAT THE DEFENDANT SHOULD BE REPRIMANDED, CENSURED, SUSPENDED FOR A DEFINITE TIME, OR EXPELLED FROM THE ASSOCIATION OR THE COMMITTEE MAY RECOMMEND OTHER APPROPRIATE ACTION.

THE BOARD SHALL, WHEN NECESSARY, FURTHER DEFINE THE FUNCTIONS OF THE GRIEVANCE COMMITTEE AND MAY ESTABLISH SUCH RULES OF PROCEDURE AS FROM TIME TO TIME MAY BECOME NECESSARY OR DESIRABLE.

ADOPTED, APRIL 30, 1977

**Resolution A-2-77**

Subject: UNIFIED MEMBERSHIP

**Resolution A-4-77**

Subject: UNIFIED MEMBERSHIP

RESOLUTION A-2-77 and A-4-77 were ombined into Resolution A-2-77

NOT ADOPTED, APRIL 30, 1977

**Resolution A-3-77**

Subject: CHAPTER V – ELECTION OF OFFICERS AND MEMBERS OF THE BOARD

SECTION 6. Geographic Distribution and Election of District Directors

RESOLVED, That Chapter V, Section 6, be amended to read as follows:

Section 6. Geographic Distribution and Election of District Directors; There shall be six state districts which shall be designated as Central (Maricopa County); Northeastern (Apache, Gila and Navajo Counties); Northwestern (Coconino, Mohave and Yavapai Counties); Southeastern (Cochise, Graham, Greenlee and Santa Cruz Counties); Southern (Pima County); and Southwestern (Pinal and Yuma Counties); *(four of the districts, Northeastern, Northwestern, Southeastern and Southwestern shall have one Director elected from each; the Southern district shall have three Directors; and the Central district shall have five Directors)* EACH DISTRICT SHALL BE REPRESENTED BY ONE DIRECTOR FOR THE FIRST 200 ACTIVE MEMBERS OR FRACTION THEREOF: AND ONE DIRECTOR FOR EACH ADDITIONAL 200 ACTIVE MEMBERS OR FRACTION THEREOF, AS DETERMINED ON OCTOBER FIRST PRECEDING THE ANNUAL MEETING. Terms of District Directors shall not run concurrently.

and, be it further

RESOLVED, That other Sections of the Bylaws affected by this amendment will be changed to conform.

REFERRED TO THE PRESIDENT FOR STUDY BY SUCH COMMITTEE OR AD HOC COMMITTEE AS HE SO DESIGNATES AND REPORT BACK TO THE HOUSE OF DELEGATES AT THE NEXT MEETING, APRIL 30, 1977

**Resolution A-5-77**

Subject: INTRODUCTION OF RESOLUTIONS

RESOLVED, That Chapter VIII, Section 6 be amended to read:

Section 6. Reference Committees: – At or before each Annual Meeting, the Speaker shall appoint the following reference committee from among the Delegates OR ALTERNATE DELEGATES: Credentials; Nominations; Reports; Amendments; Resolutions; and such other committees as the Speaker may from time to time designate. Each of such committees, unless otherwise specified, shall consist of at least three members, who shall serve during the Annual Meeting for which they are appointed.

(a) The Committee on Credentials shall examine the credentials or each Delegate or Alternate claiming membership in the House, and recommend the seating of those holding proper credentials. It shall also report to the Speaker as to whether a quorum is present and its members shall act as sergeants at arms.

(b) The Committee on Nominations shall be a committee of at least three selected from and representing the Nominating Committee, as described in Chapter V. Section 5, shall present the nominations of the Nominating Committee to the House, and shall act as Tellers.

(c) The Committee on Reports shall receive and review the reports of officers, the Board and standing and special committees in advance of the first session, and shall report thereon at the first session.

(d) The Committee on Amendments shall receive all proposals to amend the Articles of Incorporation and these Bylaws, presented and read at the first session; and the time and place of the committee meeting shall be posted and announced in order that proponents and opponents of proposed amendments may be heard. The committee shall make its report to the House at the second session.

(e) The Committee(S) on Resolutions shall receive and review all resolutions and other proposals not specifically delegated to other reference committee(S), introduced at the first session. The committee(S) shall consider the same at a meeting, the time and place of which shall be posted and announced in order that proponents and opponents of the various resolutions and proposals may be heard. The committee(S) shall make their reports thereon at the second session of the House. New business, not provided for in the orders of the day for the second session, cannot be considered at that session except by suspension of the rules.

RESOLUTIONS MAY BE PROPOSED BY (A) THE BOARD, (B) ANY MEMBER OF THE HOUSE OF DELEGATES, (C) ANY COUNTY SOCIETY, (D) ANY COMMITTEE OR SECTION OF THE ASSOCIATION, OR (E) BY A PETITION SIGNED BY TWENTY OR MORE MEMBERS OF THE ASSOCIATION. ALL RESOLUTIONS ARE TO BE ACCOMPANIED BY A FISCAL NOTE WHERE APPROPRIATE.

AT THE DISCRETION OF THE SPEAKER, MORE THAN ONE COMMITTEE ON RESOLUTIONS MAY BE APPOINTED IN ACCORDANCE WITH CHAPTER VII, SECTION 6. REFERENCE COMMITTEES.

ADOPTED AS AMENDED,
APRIL 30, 1977

Meeting adjourned Sine Die at 12:32 P.M.

Derrill B. Manley, M.D.
Secretary

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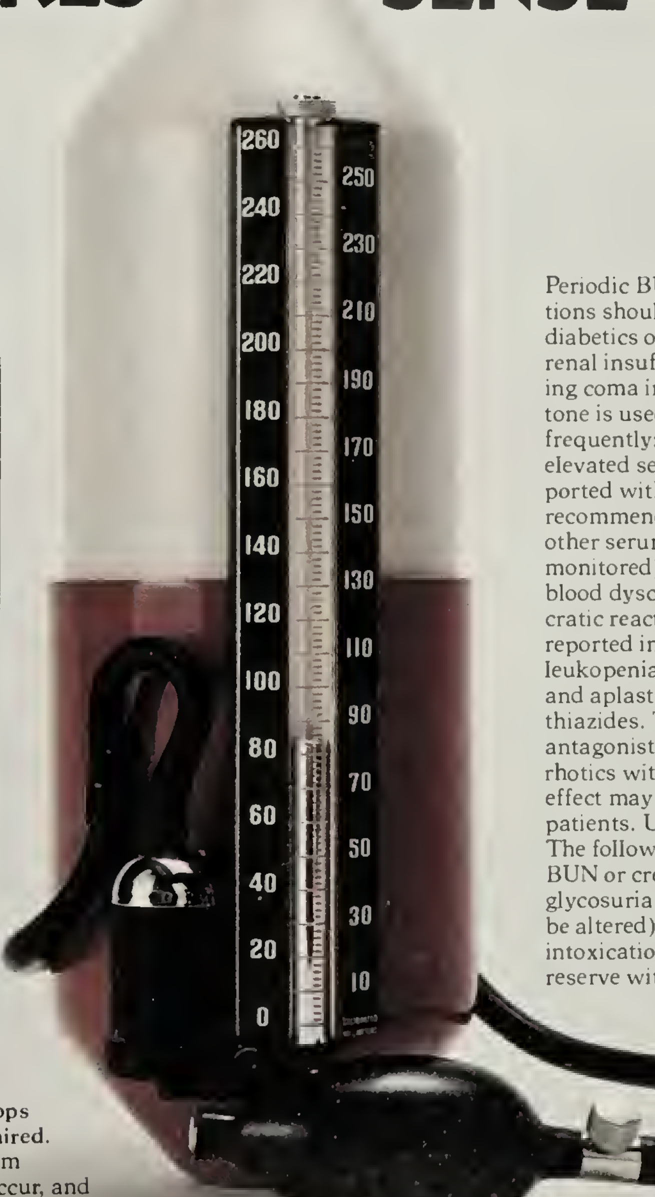

Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. A brief summary follows:

* **Warning**
This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

* **Indications:** When the combination represents the dosage determined by titration: Adjunctive therapy in edema associated with congestive heart failure, hepatic cirrhosis, the nephrotic syndrome. Corticosteroid and estrogen-induced edema, idiopathic edema; hypertension, when the potassium sparing action of triamterene is warranted. (See Box Warning.) Routine use of diuretics in healthy pregnant women is inappropriate; they are indicated in pregnancy only when edema is due to pathological causes.

**Contraindications:** Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired.** If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum $K^+$ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict $K^+$ intake. Associated **widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum $K^+$ frequently; both can cause $K^+$ retention and elevated serum $K^+$. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis.

'Dyazide' interferes with fluorescent measurement of quinidine.

**Adverse Reactions:** Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

**Supplied:** Bottles of 100 and 1000 capsules; Single Unit Packages of 100 (intended for institutional use only).

**FOR LONG-TERM CONTROL OF HYPERTENSION:* SERUM $K^+$ AND BUN SHOULD BE CHECKED PERIODICALLY. (SEE WARNINGS SECTION.)**

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he same amount of medication, the same fficacy, with only *half* the number of tablets er day.

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Gantanol is contraindicated during pregnancy, during the nursing period, and in infants under 2 months. During therapy, maintain adequate fluid intake, perform frequent CBC's and urinalyses with careful microscopic examination.

*Data on file, Hoffmann-La Roche Inc., Nutley, New Jersey.

# and economy

**Before prescribing, please consult complete product nformation, a summary of which follows:**

**Indications:** Acute, recurrent or chronic urinary tract infecions (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli, Klebsiella-Aerobacter,* staphylococcus, *Proteus mirabilis* and, less frequently, *Proteus vulgaris*), in the absence of obstructive uropathy or oreign bodies. Note: Carefully coordinate *in vitro* sulonamide sensitivity tests with bacteriologic and clinical esponse; add aminobenzoic acid to follow-up culture nedia. The increasing frequency of resistant organisms imits the usefulness of antibacterials including sulonamides, especially in chronic or recurrent urinary tract nfections. Measure sulfonamide blood levels as variations nay occur; 20 mg/100 ml should be maximum total level.

**Contraindications:** Sulfonamide hypersensitivity; pregnancy at term and during nursing period; infants less than wo months of age.

**Warnings:** Safety during pregnancy has not been estabished. Sulfonamides should not be used for group A beta-hemolytic streptococcal infections and will not eradicate or prevent sequelae (rheumatic fever, glomerulonephritis) of such infections. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy. Insufficient data on children under six with chronic renal disease.

**Precautions:** Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

**Adverse Reactions:** *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *gastrointestinal reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia as well as thyroid malignancies in rats following long-term administration. Cross-sensitivity with these agents may exist.

**Dosage: Systemic sulfonamides are contraindicated in infants under 2 months of age** (except adjunctively with pyrimethamine in congenital toxoplasmosis). *Usual adult dosage:* 2 Gm (2 DS tabs or 4 tabs or 4 teasp.) initially, then 1 Gm *b.i.d.* or *t.i.d.* depending on severity of infection.

*Usual child's dosage:* 0.5 Gm (1 tab or teasp.)/20 lbs of body weight initially, then 0.25 Gm/20 lbs *b.i.d.* Maximum dose should not exceed 75 mg/kg/24 hrs.

**Supplied:** DS (double strength) tablets, 1 Gm sulfamethoxazole; Tablets, 0.5 Gm sulfamethoxazole; Suspension, 0.5 Gm sulfamethoxazole/teaspoonful.

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accredited institutions and organizations above produce iety of continuing medical education programs Each edited institution and organization is responsible for gnating which of these programs meet ArMA's require-'s for Category I credit Physicians who participate in rams which are designated Category I by accredited utions will receive Category I credit toward the ArMA ficate in CME and the AMA's Physicians Recognition rd

## AUGUST

### MBINED GRAND ROUNDS

gust 3, 1977, Scottsdale Memorial Hospital. onsor: Family Practice Residency Programs St. Joseph's, Good Samaritan, and Scotts-e Memorial Hospitals. Contact: Ann Larsen, ., Program Coordinator, Family Practice sidency Program, St. Joseph's Hospital d Medical Center, Phoenix, AZ 85013. Ap-oved for required hours toward the ArMA rtificate in Continuing Medical Education.

## SEPTEMBER

### DICAL HISTORY SOCIETY OF ARIZONA

ptember 29, 1977. Contact: William C. ese, M.D., 2910 North Third Street, Phoenix, 85012.

## OCTOBER

### h ANNUAL MEETING OF THE MEDICAL CIETY OF THE UNITED STATES AND XICO

tober 12-15, 1977, Del Webb's Towne use, Phoenix, AZ. Sponsor: Medical Society he United States and Mexico. Contact. Lucy Vernetti, M D , 333 W. Thomas Rd. Ste 207, oenix, AZ 85013. Approved for required urs toward the ArMA Certificate in Continu- Medical Education

### RMATOLOGY

tober 1-3, 1977, College of Nursing, U. of A., cson, AZ. Sponsor University of Arizona. ntact. John T. Condon Ed D., 1828 E. Orange ive, Phoenix, AZ. Approved for 18 required urs toward the ArMA Certificate in Continu- Medical Education.

### SIC SCIENCE REVIEW SEMINARS– luid and Electrolytes"

ctober 12 & 26 and November 9, 1977. SC–Rm. 5403, Tucson, AZ. Sponsor: U. of College of Medicine. Contact: George D. merci, M.D., 1501 N. Campbell, Tucson, AZ 724 Approved for 2-1/2 required hours per ssion toward the ArMA Certificate in Con-uing Medical Education.

### -ANNUAL SYMPOSIUM N INFECTION CONTROL

ctober 13 & 14, 1977. Sunburst Hotel, Scotts-ale, AZ. Sponsor: Association for Infection ontrol. Approved for 11 required hours to-ard the ArMA Certificate in Continuing edical Education.

### PEDIATRIC UPDATE 1978

January 16-19, Doubletree Inn, Scottsdale, AZ. Sponsor: Dept. of Pediatrics of St. Joseph's Hospital and Medical Center, Phoenix, AZ. Contact Melvin L. Cohen, M.D.. Dept of Pediatric Education, St. Joseph's Hospital and Medical Center, 350 W. Thomas Road, Phoenix, AZ 85013. Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education an A.A.F.P. credits.

### DAY OF HEMATOLOGY

March 3, 1978, Camelback Inn, Scottsdale, AZ. Sponsor: St. Joseph's Hospital and Medical Center. Phoenix, AZ. Contact: Ethelann Murray, M.D., St. Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, AZ 85013 Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

### THE SECOND NATIONAL CONFERENCE ON OTITIS MEDIA

March 3-5, 1978, Doubletree Inn, Scottsdale, AZ. Sponsor. Univ. of Arizona College of Medicine and the Indian Health Service. Contact: Office of Continuing Medical Education and Outreach, University of Arizona College of Medicine, Tucson, AZ 85724. Approved for 17.5 required hours toward the ArMA Certificate in Continuing Medical Education.

## MONTHLY OR WEEKLY

### OFFICE PSYCHIATRY FOR THE PRIMARY PROVIDER

2nd Monday of month, 4811 N. 7th Street. Phoenix, AZ. Sponsor: Arizona Health Plan Contact. T. R. Bittker, M.D., Box 5000, Phoenix. AZ 85010. Approved for required hours toward the ArMA Certificate in Continuing Medical

### FILM READING SESSIONS & SCIENTIFIC MEETINGS

Monthly. Sponsor Phoenix Radiology Society. Contact: Mrs. Mary Wood, 810 W. Bethany Home Rd., Phoenix, AZ 85013 Approved for 2 required hours per session toward the ArMA Certificate in Continuing Medical Education.

### DERMATOLOGY CLINICAL CONFERENCE

Feb. 28, 1977, Marshall Auditorium, Tucson Medical Center, Tucson, AZ Sponsor: U. of A. College of Medicine & Dept. of IM, Dermatology Sect Contact. Peter Lynch, M.D , U. of A. College of Medicine, Tucson, AZ 85724,

### CLINICAL IMMUNOLOGY, ALLERGY AND RHEUMATOLOGY ROUNDS

Every Friday Noon-1 p.m. Sponsor: U. of A. College of Medicine, Dept. of Internal Medicine, Clinical Immunology Section. Contact: John Boyer, M D , U. of A. College of Medicine, Tucson, AZ 85721. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### ENDOCRINOLOGY SEMINAR

Every Thursday, Noon-1 p.m., 1st, 3rd & 5th Thursday–Rm N318, VA Hospital, 2nd & 4th Thursday, Rm. 6505, Tucson Medical Center, Sponsor: U. of A. College of Medicine, Department of Internal Medicine, Department of Internal Medicine, Tucson, AZ 85721. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### HEMATOLOGY-ONOCOLOGY CLINICAL CONFERENCE

Every Tuesday, Noon-1 p.m 1st, 3rd & 5th Tuesdays–Rm 6505, AZ Medical Center 2nd & 4th Tuesdays–Rm. N318. Veterans Adm Hospital. Sponsor. U. of A. College of Medicine, Dept of Internal Medicine. Contact Sidney Salmon, M.D , U. of A. College of Medicine, Tucson, AZ 85721. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### GRAND WARD ROUNDS – TRAUMA

Every Tuesday, 8 a.m. Arizona Medical Center, Tucson, AZ. Sponsor U. of A. College of Medicine, Surgery Dept., Trauma Section. Contact. Martin Silverstein, M.D., U. of A. College of Medicine, Tucson, AZ 85721. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### PROBLEM CASE WORKSHOPS

3rd Monday of each month 7:30 a.m. Room 4410, Arizona Medical Center, Tucson, AZ. Sponsor: Division of Ophthalmology, U. of A. College of Medicine. Contact: H. E. Cross, M.D., Ph.D , Arizona Medical Center, Dept. of Surgery, Tucson, AZ. Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education

### MEDICAL GRAND ROUNDS

Every Wednesday, Noon-1 p.m. 1st, 3rd & 5th Wednesday–Staff Conf. Rm., VA Hospital. 2nd & 4th Wednesday–Rm. 5403, Arizona Medical Center. Sponsor. U. of A. College of Medicine, Dept. of Internal Medicine. Contact Jay Smith, M.D., U. of A. College of Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### PSYCHIATRIC GRAND ROUNDS

Every Wed., Sept. to May, 4-5:30 p.m. Rm. 8403, Arizona Medical Center, Tucson, AZ. Sponsor U. of A. College of Medicine Dept. of Psychiatry. Contact. Alan Levenson, M.D., U. of A. College of Medicine, Tucson, AZ 85721. Approved for 1-1/2 required hour per session toward the ArMA Certificate in Continuing Medical Education

### TRAUMA CONFERENCE

Every Monday, 4 p.m. Rm. 4410, Arizona Medical Center, Tucson, AZ. Sponsor: U. of A. College of Medicine, Dept. of Surgery, Trauma Section. Contact. Martin Silverstein, M.D.. U. of A. College of Medicine, Tucson, AZ 85721. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### STAFF EDUCATION CONFERENCE

Wednesdays, Weekly, 1 p.m. Arizona State Hospital, Phoenix, AZ. Sponsor Arizona State Hospital. Contact. Howard E. Wulsin, M D., Arizona State Hospital, 2500 E. Van Buren, Phoenix, AZ 85008. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### SURGICAL GRAND ROUNDS

4TH TUESDAY OF EACH MONTH

Hospital Auditorium, Baptist Hospital, Phoenix Sponsor Baptist Hospital Phoenix. Contact James B. Shields, M.D , 6036 N. 19th Ave., Phoenix, AZ 85015. Approved for 1-1/2 required hours per month toward the ArMA Certificate in Continuing Medical Education.

### PATIENT STAFFING CONFERENCE

Three times weekly. Camelback Hospital Phoenix, AZ. Sponsor: Camelback Hospital. Contact: Medical Director, Camelback Hospital, 5055 N 34th St., Phoenix, AZ 85018. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### CAMELBACK HOSPITAL CLINICAL CONFERENCE

Third Tuesday monthly. Camelback Hospital, Phoenix, AZ. Sponsor. Camelback Hospital. Contact. Medical Director, Camelback Hospital, 5055 N. 34th St., Phoenix, AZ 85018. Approved for 1 elective hour per session toward the ArMA Certificate in Continuing Medical Education.

### COUNTER TRANSFERENCE GROUP

Weekly, Thurs 8-10 p.m. Sponsor. Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N. 34th St., Phoenix, AZ 85018. Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

### DESERT SAMARITAN HOSPITAL

Wednesday Evenings 7 p.m. Sponsor: Desert Samaritan Hospital. Contact: L. A. Rosati, M.D., Laboratory, Desert Samaritan Hospital, Mesa. AZ 85202. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### PULMONARY DISEASE GRAND ROUNDS

Mondays—12 Noon. D-5 North Conference Rm., Good Samaritan Hospital, Phoenix, AZ. Sponsor Pulmonary Disease Teaching Service, Good Samaritan Hospital. Contact Bernard E. Levine, M.D., Pulmonary Function Laboratory, Good Samaritan Hospital, 1033 E. McDowell Hospital, Phoenix, AZ 85006. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### CLINICAL CANCER CONFERENCE

3rd Wednesday every month, Butler Bldg. Conference Room, Good Samaritan Hospital, Phoenix, AZ. Sponsor. Good Samaritan Hospital. Contact. John A Bruner, M.D., 926 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### TUMOR BOARD CONFERENCE

Every Friday at Noon, Kiva Conference Room, Phoenix Memorial Hospital Sponsor: Phoenix Memorial Hospital. Contact. Howard Kimball, M.D., 333 West Thomas Road. Phoenix, AZ 85013. Approved for credit toward the ArMA Certificate in Continuing Medical Education.

### MONTHLY MEDICAL EDUCATION SEMINAR

Third Monday of the Month, 6:30 p.m., Kiva Conference Room, Phoenix Memorial Hospital. Sponsor: Medical Staff of Memorial Hospital. Contact: George Scharf, M.D. 1201 South 7th Avenue, Phoenix, AZ 85007. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### MONTLHY MEETING OF TUCSON RADIOLOGISTS

Last Tues. of Month, Plaza International, Tucson, AZ. Sponsor: U. of A. Medical Center, Dept. of Radiology. Contact. Irwin M. Freundlich, M.D., Arizona Medical Center, Dept. of Radiology, Tucson, AZ 85724. Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

### FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor: Medical Staff. Contact: R. C. Good, M.D., Dir of Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### MORBIDITY & MORALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor: Medical Staff. Contact. R. C. Good, M.D., Dir. Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor: Medical Staff. Contact: R. C. Good. M.D., Director of Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor: Medical Staff. Contact: R. C. Good, M.D., Dir. of Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### CARDIOLOGY CONFERENCE

Weekly—Friday 8-9 a.m., St. Mary's Hospital Auditorium, Tucson, AZ. Sponsor: St. Mary's Hospital. Contact: A. L. Forte, M.D., St. Mary's Hospital, Tucson, AZ 85724. Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

### GRAND ROUNDS

Each Thursday 7 a.m.-8 a.m., St. Mary's Hospital and Health Center, Sponsor: Depts. of Medicine, Surgery, Radiology, Pathology and Family Practice. Contact. Richard Silver, M.D., Chairman, Medical Education and Library Committee, Century Medical Plaza, Suite 160, 1701 West St. Mary's Road, Tucson, AZ 85703. Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

### GI CONFERENCE

(Special Program with U. of A. Consultants) 4th Friday, 1 p.m., T-5. Sponsor: VA Hospital Phoenix Contact Jasper L. McPhail, M.D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### G.I.-RADIOLOGY CLINICAL CORRELATION CONFERENCE

1st and 3rd Monday, 1 p.m., C435. Sponsor. VA Hospital, Phoenix, AZ Contact: Jasper L. McPhail, M.D., Veterans Administration Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### GASTROENTEROLOGY CONFERENCE

1st and 3rd Tuesday, 1 p.m., T-5. Sponsor Hospital Phoenix, Contact: Jasper L. McPl M.D. VA Hospital, 7th & Indian School Phoenix, AZ. Approved for required hc toward the ArMA Certificate in Contint Medical Education.

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### CLINICOPATHOLOGY CONFERENCE

4th Thursday of 3rd Mo. (Mar., June., Sep Dec.), 1 p.m., T-5. Sponsor: VA Hosp Phoenix. Contact: Jasper L. McPhail, M.D. Hospital, 7th & Indian School Rd., Phoenix. Approved for required hours toward the Ar Certificate in Continuing Education.

### MEDICAL-SURGICAL CHEST CONFERENCE

1st and 3rd Thursday, 1 p.m., T-5. Sponsor: Hospital Phoenix. Contact: Jasper L. McPh M.D., VA Hospital, 7th & Indian School Phoenix, AZ. Approved for required hc toward the ArMA Certificate in Continu Medical Education.

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### SURGERY-PATHOLOGY CONFERENCE

Each Thursday, 7 a.m., 2128. Sponsor: Hospital Phoenix. Contact: Jasper L. McPh M.D., VA Hospital, 7th & Indian School Phoenix, AZ. Approved for required ho toward the ArMA Certificate in Continui Medical Education.

### DERMATOLOGY CONFERENCE

1st, 2nd & 3rd Wednesday. Sponsor: VA H pital Phoenix. Contact: Jasper L. McPhail, M. VA Hospital, 7th & Indian School Rd., Phoer AZ. Approved for required hours toward t ArMA Certificate in Continuing Medical Ec cation.

### MEDICAL SERVICE GRAND ROUNDS

Each Friday, 11 a.m., T-5. Sponsor: VA Hospi Phoenix. Contact: Jasper L. McPhail, M.D., Hospital, 7th & Indian School Rd., Phoenix, Approved for required hours toward the Ar Certificate in Continuing Medical Educatior

### HEPATOLOGY CONFERENCE

2nd and 4th Tuesday, 1 p.m., 2128. Spons VA Hospital Phoenix. Contact: Jasper McPhail, M.D., VA Hospital, 7th & Indian Sch Rd., Phoenix, AZ. Approved for required ho toward the ArMA Certificate in Continu Medical Education.

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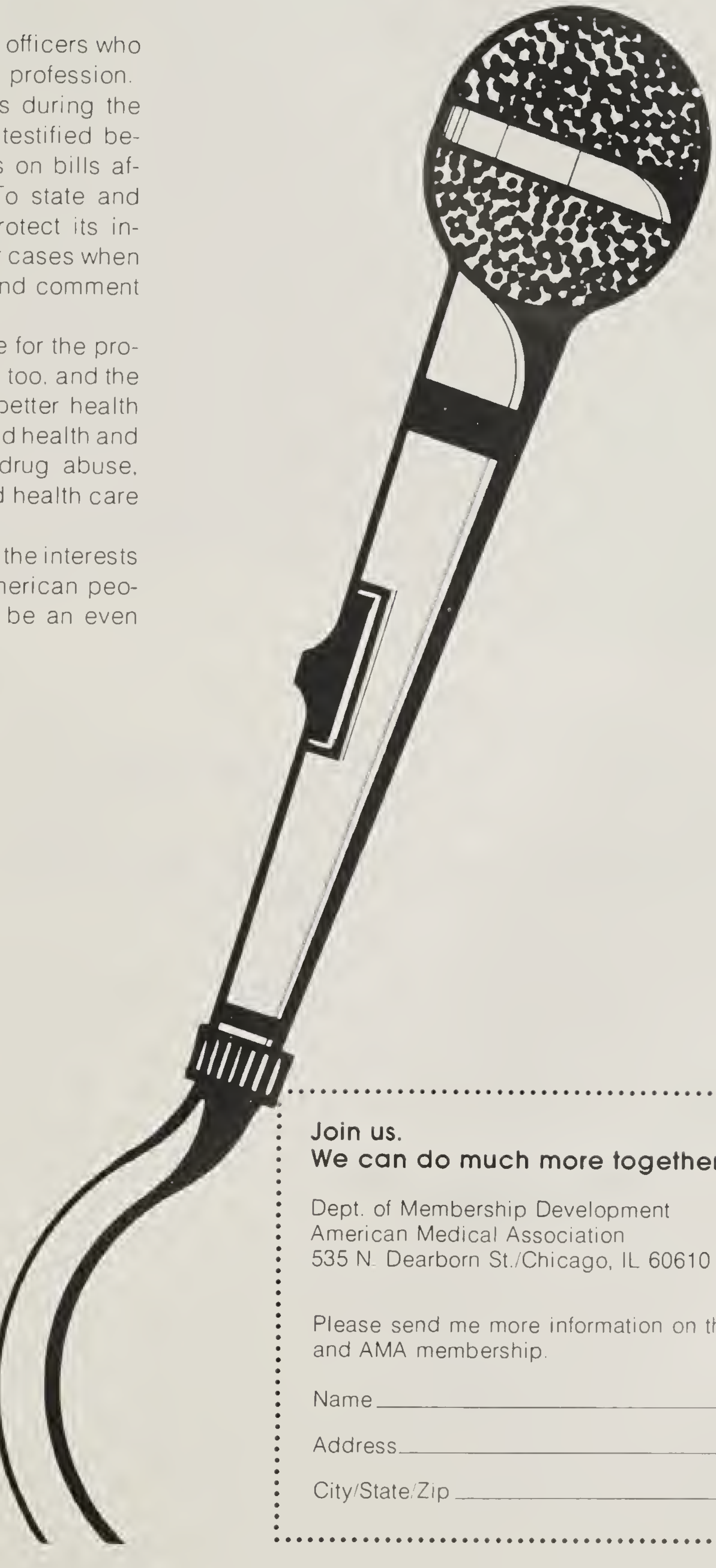

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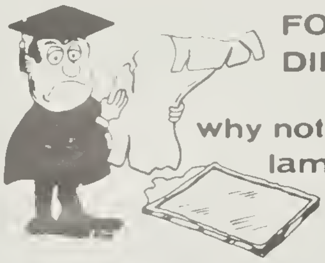

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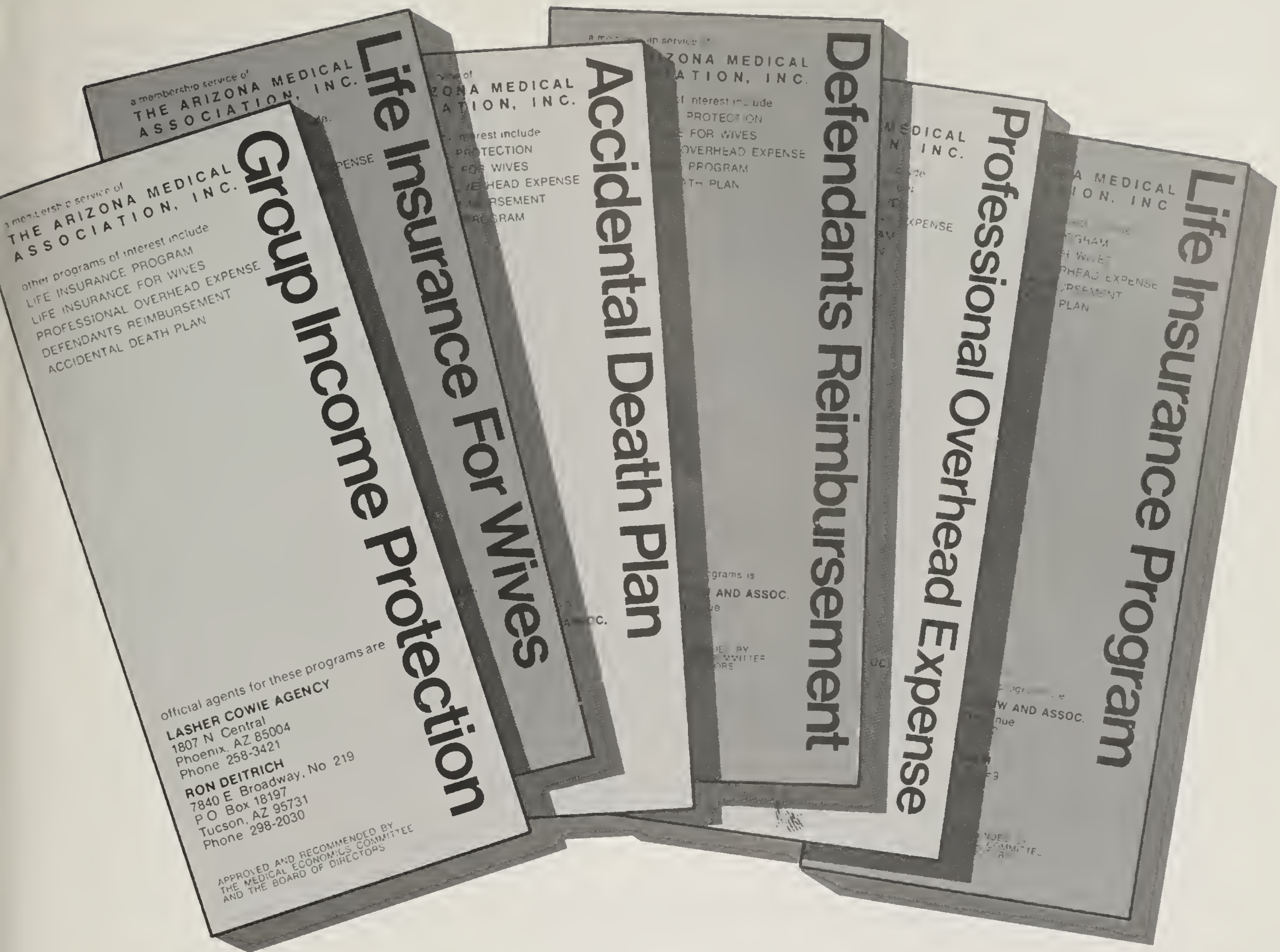

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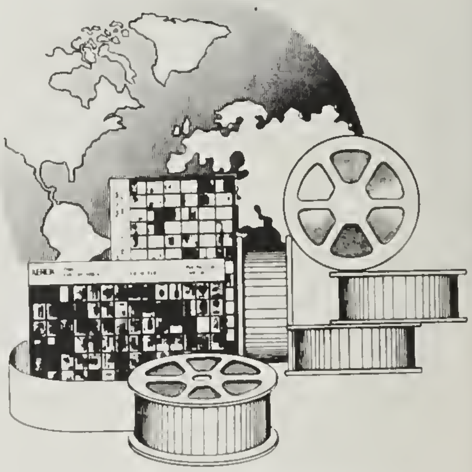

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**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms:** *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus morganii.* **It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination.** *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

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**Contraindications:** Hypersensitivity to trimethoprim or sulfonamides; pregnancy; nursing mothers; infants less than two months of age.

**Warnings:** Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

**Precautions:** Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function.

**Adverse Reactions:** All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L. E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

**Dosage: Not recommended for infants less than two months of age.**

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Recommended dosage for children—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. A guide follows:

*Children two months of age or older*

| Weight | | Dose—every 12 hours | |
|---|---|---|---|
| lbs | kgs | Teaspoonfuls | Tablets |
| 20 | 9 | 1 teasp. (5 ml) | ½ tablet |
| 40 | 18 | 2 teasp. (10 ml) | 1 tablet |
| 60 | 27 | 3 teasp. (15 ml) | 1½ tablets |
| 80 | 36 | 4 teasp. (20 ml) | 2 tablets or 1 DS tablet |

For patients with renal impairment:

| Creatinine Clearance (ml/min) | Recommended Dosage Regimen |
|---|---|
| Above 30 | Usual standard regimen |
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| Below 15 | Use not recommended |

*Pneumocystis carinii pneumonitis:* Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

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August 1977 Vol. XXXIV 8

# A character all its own.

Valium (diazepam) is a benzodiazepine with a character all its own. Pharmacologically, it has been described as more potent mg-per-mg than other available anxiolytic benzodiazepines. Pharmacokinetically, only Valium provides active *diazepam* as well as the active metabolites 3-hydroxydiazepam, desmethyldiazepam and oxazepam.

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**Indications:** Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy).

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

***Usage in Pregnancy:* Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy

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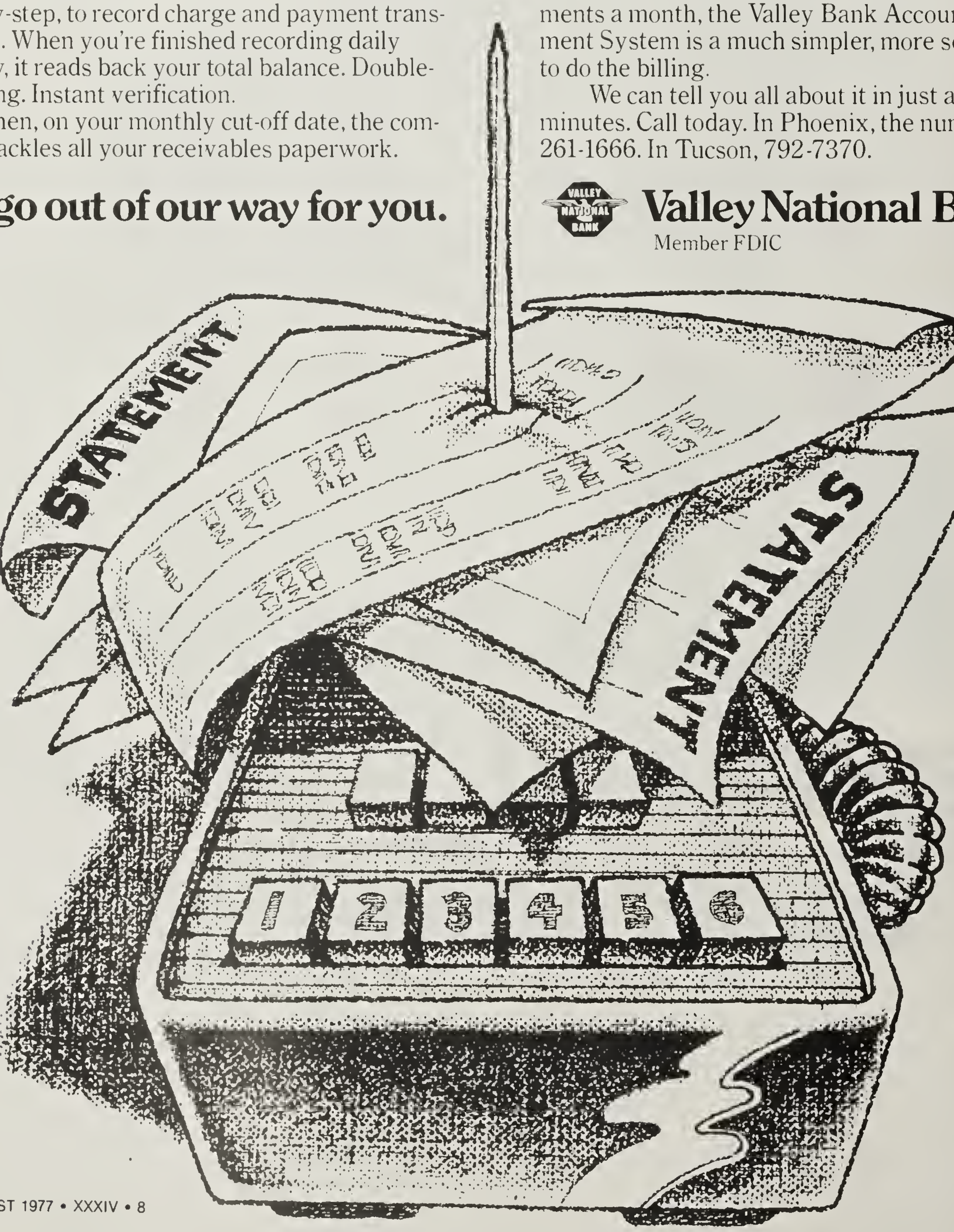

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2. In peripheral vascular disease of arteriosclerosis obliterans, thromboangiitis obliterans (Buerger's Disease) and Raynaud's disease.
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Parenteral administration is not recommended in the presence of hypotension or tachycardia.

Intravenous administration should not be given because of increased likelihood of side effects.

Adverse Reactions: On rare occasions oral administration of the drug has been associated in time with the occurrence of hypotension, tachycardia, nausea, vomiting, dizziness, abdominal distress, and severe rash. If rash appears the drug should be discontinued.

Although available evidence suggests a temporal association of these reactions with isoxsuprine, a causal relationship can be neither confirmed nor refuted.

Administration of single dose of 10 mg. intramuscularly may result in hypotension and tachycardia. These symptoms are more pronounced in higher doses. For these reasons single intramuscular doses exceeding 10 mg. are not recommended. Repeated administration of 5 to 10 mg. intramuscularly at suitable intervals may be employed.

Supplied: Tablets, 10 mg., bottles of 100, 1000, 5000 and Unit Dose; Tablets, 20 mg., bottles of 100, 500, 1000, 5000 and Unit Dose; Injection, 10 mg. per 2 ml. ampul, box of six 2 ml. ampuls.

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*Czapek EE: *JAMA 235*:636, 1976.

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**Contraindications:** Hypersensitivity to aspirin, phenacetin, caffeine or codeine.

**Warnings:** See Warnings below.

**Precautions:** *Allergic:* Precautions should be taken in administering salicylates to patients with active peptic ulcers and those with known allergies; patients with nasal polyps are especially likely to be hypersensitive to the medication. SEE ADDITIONAL PRECAUTIONS BELOW.

**Adverse Reactions:** Most frequent adverse reactions are listed below. Some patients taking salicylates develop nausea and vomiting. Hypersensitivity may be manifested by skin rash or anaphylactic reaction. With these exceptions, most side effects occur after repeated administration of large doses; include headache, vertigo, ringing in ears, mental confusion, drowsiness, sweating, thirst, nausea, and vomiting. Occasional patients experience gastric irritation and bleeding with aspirin.

Phenacetin side effects usually result from overdosage. Cyanosis, acute hemolytic anemia, skin lesions, and fever may appear with toxic doses. Continued abuse may lead to renal damage.

Caffeine side effects almost always result from overdosage; include insomnia, restlessness, excitement, tense muscles, and diuresis. Tachycardia and extra systoles may be observed.

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**Warnings:** *Drug dependence.* Codeine can produce drug dependence of the morphine type and may be abused. Dependence and tolerance may develop upon repeated administration; prescribe and administer with same caution appropriate to oral narcotics. Subject to the Federal Controlled Substances Act.

*Usage in ambulatory patients.* Caution patients that these products may impair mental and/or physical abilities required for performance of potentially hazardous tasks such as driving a car or operating machinery.

*Interaction with other CNS depressants.* Patients receiving other narcotic analgesics, general anesthetics, phenothiazines, tranquilizers, sedative-hypnotics, or other CNS depressants (including alcohol) may exhibit additive CNS depression; when used together reduce dose of one or both.

*Usage in Pregnancy.* Safe use is not established. Should not be used in pregnant patients unless potential benefits outweigh possible hazards.

**Precautions:** *Head injury and increased intracranial pressure.* Respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

*Acute abdominal condition.* These products or other narcotics may obscure the diagnosis or clinical course of acute abdominal conditions.

*Special risk patients.* Administer with caution to certain patients such as elderly or debilitated patients and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, or prostatic hypertrophy or urethral stricture.

**Adverse Reactions:** Most frequently include lightheadedness, dizziness, sedation, nausea, and vomiting; more prominent in ambulatory than in nonambulatory patients; some may be alleviated if patient lies down; others include: euphoria, dysphoria, constipation and pruritis.

**Drug Interactions:** CNS depressant effect may be additive with that of other CNS depressants. See Warnings.

For symptoms and treatment of overdosage and full prescribing information, see package insert.

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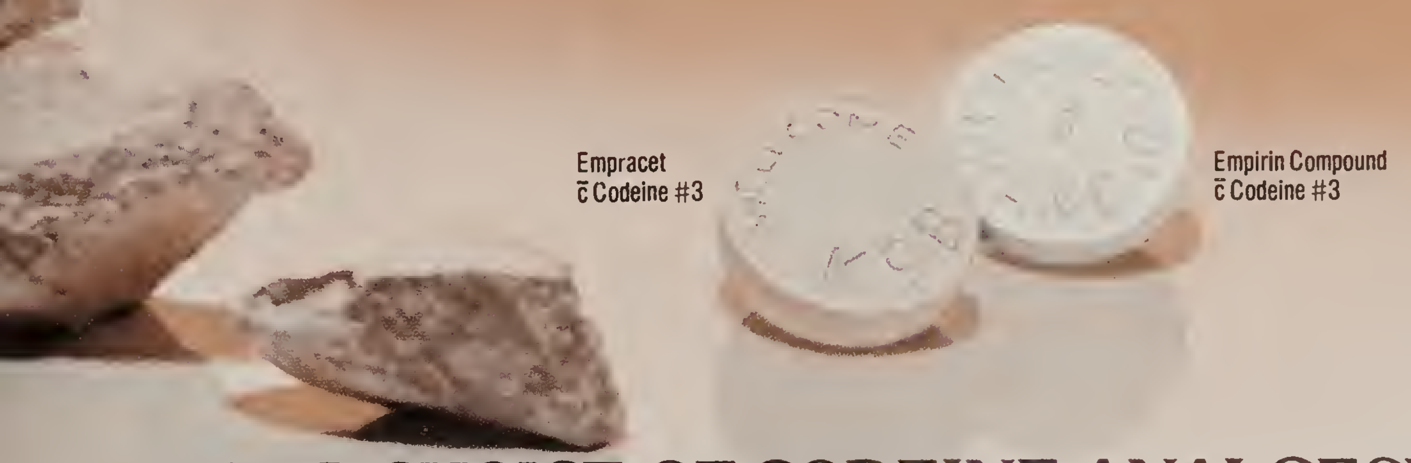

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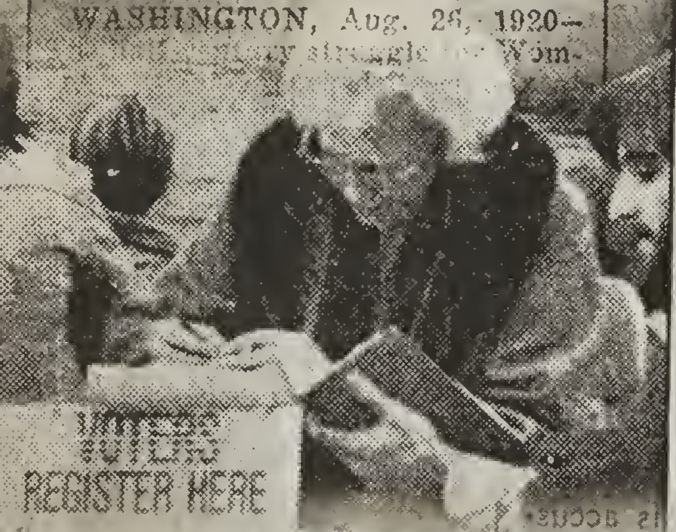

NEW YORK THURSDAY, AUGUST 15,

# Social Security Bill Is Signed Gives Pensions to Aged, Jol

## Roosevelt Approves Message Intended to Benefit 30,0 Persons When States Adopt Cooperating Laws—He the Measure 'Cornerstone' of His Economic Progr

WASHINGTON, Aug. The Social Security Bill, a broad program of unem insurance and old age and counted upon to ben 20,000,000 persons, becam day when it was signed dent Roosevelt in the pr those chiefly responsible ting it through Congress.

Mr. Roosevelt cal "the cornerstone which is being me s comple rin to

# SENATE APPROVES 18-YEAR OLD VOTE IN ALL ELECTIONS

Amendment to Constitution is Sent to House, Where Passage is Expected

WASHINGTON, March 10, 1971—The Senate approved today, 94 to 0, and sent to

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## NEW WORLD HOPE

President Hails 'Great Instrument of Peace,' Insists It Be Used

## HISTORIC LANDMARK

Meeting Gives Standing Ovation as Executive Pictures Peace Gain

"If we fail to use it," he declared to the solemn final meeting of the delegates, 'we shall betray all of those who have died in order that we might meet here in freedom and safety to create it.'

"If we seek to use it selfishly—for the advantage of any one nation or any small group of nations—we shall be equally guilty of that betrayal."

Fervent Interpolation

The President, speaking in the auditorium of the War Memorial Opera House, built in memory of sons of the Golden Gate city who gave their lives in the first World War, in which he himself served, seemed to give unconscious expression to the solemn feeling of the occasion when, at the outset of his speech, he interpolated the words, half a hope, half a prayer:

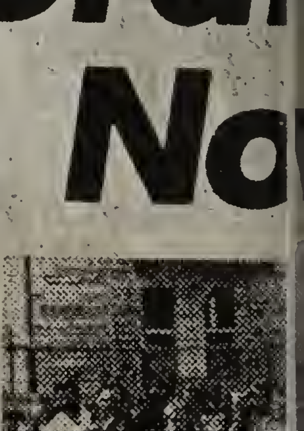
"Oh, what a great day this can be in history!"

Just before the plenary session

# SIGN

# the Dra Ends No

WASHINGTON, Jan. 27, 1973—"With the signing of the peace agreement in Paris today, and after receiving a report from the



# PATIENT PACKAGE INSERTS: A CONCEPT WHOSE TIME HAS COME?

*The consumer's right to know is an irreversible and desirable trend of the Seventies. It extends, and properly, to a patient's right to know more about his or her prescription medications. One way, gaining favor, is through patient package inserts. Wisely-prepared and properly distributed when medically indicated, they could markedly improve patient knowledge and drug therapy—laudable goals by anyone's standards.*

*The PMA endorses these goals and will work with government, the health professions and consumers to achieve them.*

## The Advantages

The concept holds promise of benefits: better patient understanding of the product prescribed, better adherence to the treatment plan, and more awareness of possible side reactions.

Every doctor has had patients who fail to finish antibiotic regimens because they feel better. Some patients assume that if one tranquilizer or analgesic is good, two may be twice as good. Still others fail to report dizziness while on antihypertensive therapy —and so on.

Problems like these might arise less often if the patient received written information in addition to verbal instructions. Some studies suggest that patients are more receptive to such materials, and they more often understand the verbal instructions and follow them, when inserts are used.

## The Disadvantages

There are also some potential problems. Obviously, the inserts must be clearly phrased, without extraneous or complex detail. How much information is enough? How can it be kept current? Should all patients receive the same information? Should inserts be included with all drugs? Should only potential problems be listed or are patients better off with a "fair balance" presentation that describes usefulness as well as drawbacks?

These and similar questions require answers, since model inserts have yet to be properly developed and tested. Despite the need for these studies, the FDA is proceeding prematurely with inserts on selected products. We think the Congress is the only place where the matter can be given the proper legal status and direction, particularly since it represents a conceptual change in the legal, medical and social framework of the nation's prescription drug information system.

## The Solution

The PMA believes that carefully-devised pilot studies of various kinds of inserts are needed. They should be developed and implemented with full participation by doctors, pharmacists, consumers, communications experts and the drug industry. Such studies will provide reliable pathways to follow, so that inserts will be useful aids to medical practice.

And particularly we think that you should be closely involved in this debate and in these studies and decisions. Otherwise, people with less experience and qualifications may control the purposes, content and use of a tool with considerable promise for improved patient care. It could make a difference in your practice tomorrow, and more importantly, in the health of your patients.

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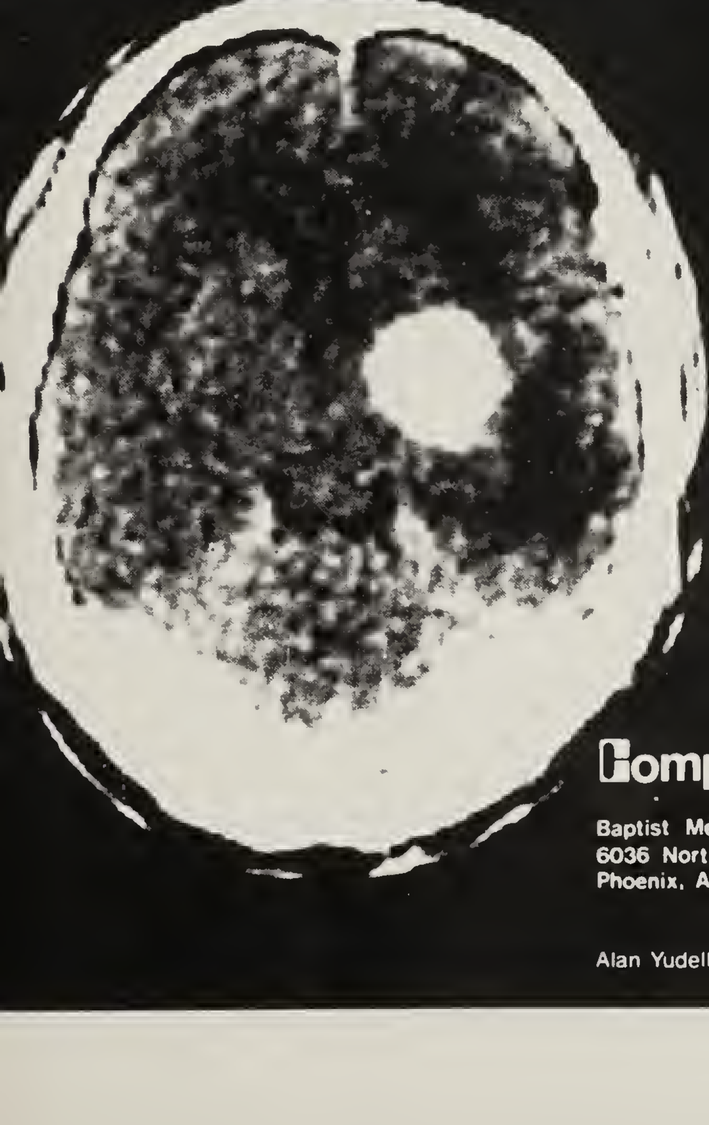

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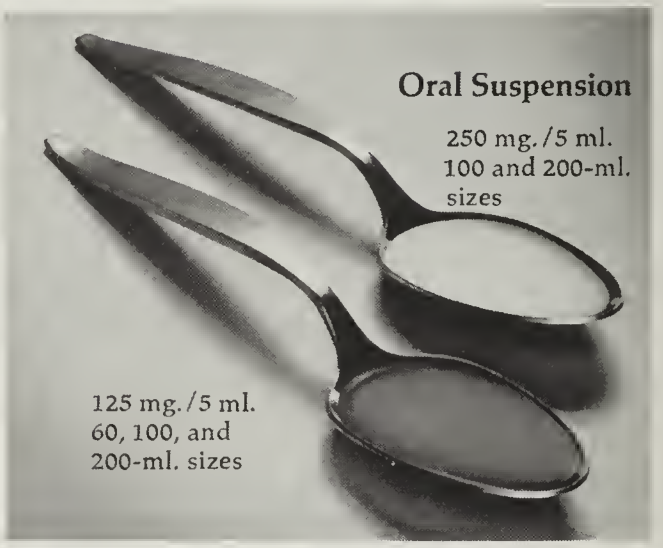

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Cardiology

# Current Concepts Of Ventricular Pre-Excitation

S. Sridhar, M.D.
Kenneth B. Desser, M.D.
Alberto Benchimol, M.D.

This article represents a brief summary of recent developments in the field of ventricular pre-excitation and is addressed to those engaged in clinical practice who have more than a casual interest in the interpretation and management of cardiac arrhythmias.

The term pre-excitation refers to activation of the ventricular myocardium, in whole or in part, by an atrial impulse, earlier than expected, were the impulse to travel via the usual A-V conduction system alone[1]. Thus, depending on the degree of pre-excitation, the typical QRS complex displays a fusion morphology which is wide and has an initial slurring (the delta wave). Spatial orientation of the delta wave or major QRS complex deflection in the chest leads has been the basis for an over-simplified traditional classification of Wolff-Parkinson-White syndrome into types A and B[2], (Figure 1,2). Any such vectorial classification that attempts anatomic localization of the accessory pathways has several limitations[3].

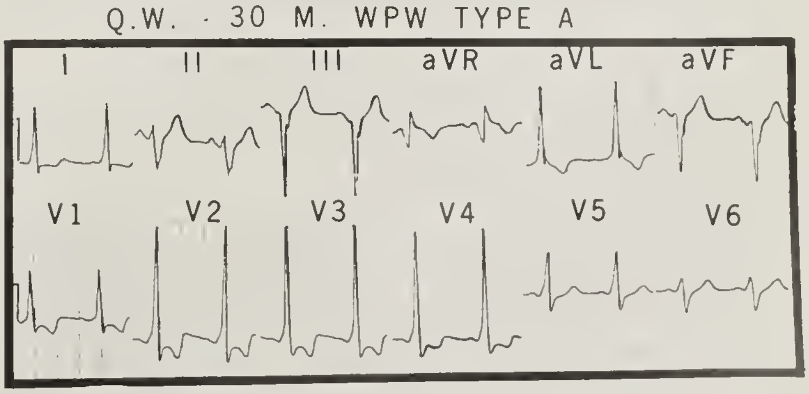


**Figure 1:** Electrocardiogram demonstrates typical type "A" ventricular pre-excitation. Note the short P-R interval, widened QRS complex and delta wave. Such a tracing can be misdiagnosed as representing left anterior hemiblock, right bundle branch block or combined ventricular hypertrophy. Note that both the delta wave and QRS complex are inscribed in a positive direction in lead V1.

---

From: The Institute for Cardiovascular Diseases, Good Samaritan Hospital. Supported by the E. Nichols Memorial Fund & The Institute for Cardiovascular Diseases, Inc. Reprint requests to Alberto Benchimol, M.D., Good Samaritan Hospital, P. O. Box 2989, Phoenix, AZ 85062.

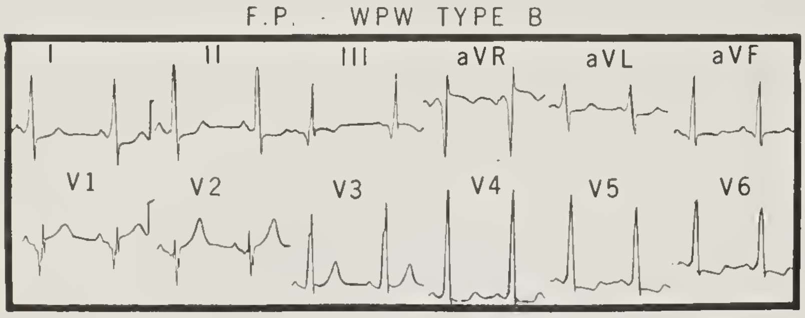


Figure 2: Electrocardiogram shows type "B" ventricular pre-excitation with the delta wave inscribed in a negative fashion in lead V1. Note that short P-R intervals are most evident in leads I, aVL and V4-6. "Pseudonormalization" of the P-R interval in leads II, III and aVFresult from delta wave vectors coursing perpendicular to the inferior leads. A normal appearing P-R interval in a single lead does not militate against the diagnosis of Wolff-Parkinson-White syndrome.

Some of these drawbacks have been recently brought to light and are as follows: 1) Co-existence of multiple bypass pathways [4], 2) QRS complex fusion of varying degree that produces changes in the initial vector which range from an almost imperceptible delta wave to a pattern that could easily mimic a conduction defect or myocardial infarction, 3) pathways that conduct exclusively in the retrograde direction [5], 4) intermittence of orthograde pre-excitation, (Figure 3), 5) variable location of the responsible bypass pathway causing QRS complexes that do not conform to the traditionally recognized descriptions, and 6) change of type A to type B in the same patient which probably reflects the presence of multiple pathways[6]. Despite these shortcomings a recent report from Duke University suggests that a free lateral wall pathway can be differentiated from a para-septal pathway by an inferior as opposed to superior orientation of the initial 20msec vectors [3]. Conceptually, it is important to distinguish free wall from septal pathways because differentiation of supraventricular tachycardias due to a A-V nodal re-entry from those due to participation of anomalous septal pathways is extremely difficult [7], [8]. Should surgical division of the bypass bundle be contemplated for the treatment of pharmacologically resistant tachyarrhythmias, incidental damage to the normal conduction system is a potential hazard.

In an elegant discussion of the evaluation of pre-exicitation syndromes in those patients with repeated, hemodynamically significant and life threatening arrhythmias, Gallagher et al [9] emphasized the necessity for recognizing: 1) whether or not pre-excitation is operative, 2) if the accessory pathway is functional in an antegrade or retrograde direction, 3) location of the anomalous pathway, 4) the presence of either single or multiple pathways, 5) whether or not the pathway is an innocent bystander while the patient has a reciprocating tachycardia due to some other cause and 6) conduction characteristics of the pathway which would enable prediction of the ventricular rate should the patient develop atrial fibrillation or the rate of the tachycardia durin episodes of reciprocation.

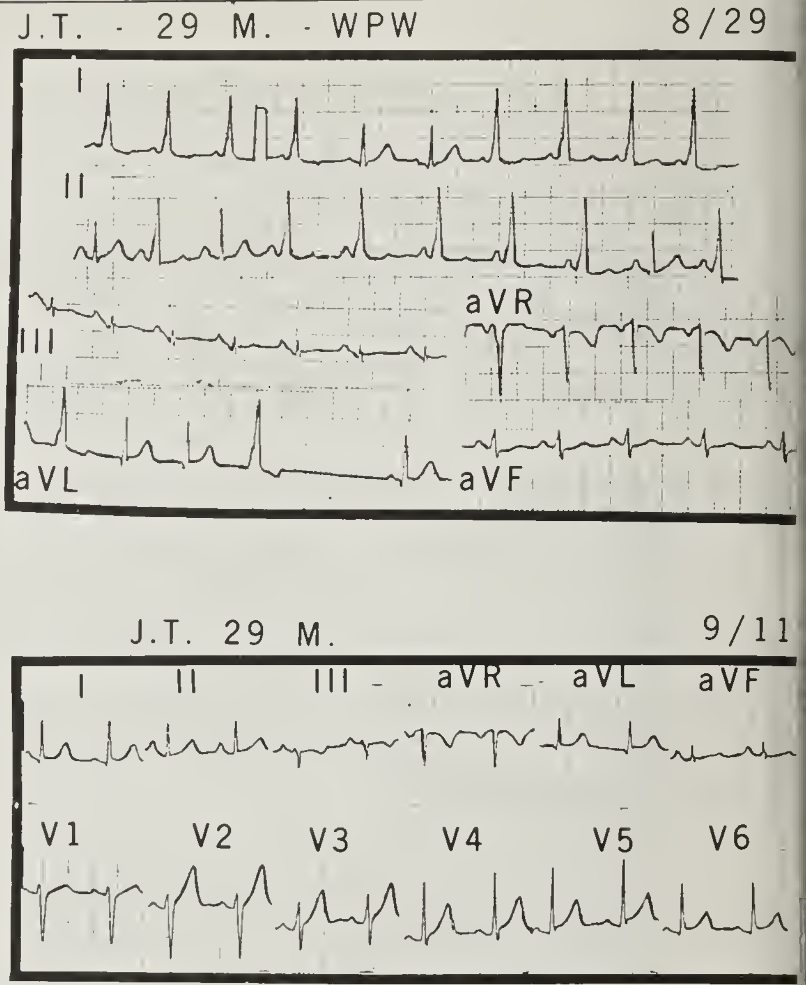


Figure 3:
Upper panel: Standard and augmented limb leads from a 29 yea old male show intermittent shortening of P-R interval an appearance of delta waves diagnostic of ventricular pre-excitation. Lower panel: Twelve lead electrocardiogram obtained weeks later shows no evidence of Wolff-Parkinson-Whit syndrome. Ventricular pre-excitation cannot be ruled out on th basis of a single electrocardiogram.

Programmed atrial pacing in combination with Hi bundle electrography has provided an exciting development for the recognition and evaluation o ventricular pre-excitation. The Wolff-Parkinson-Whit syndrome is unequivocally proved if the delta wave o the surface electrocardiogram occurs before the Hi spike on the intracardiac electrogram. During premature stimulation of the atria or on pacing at increasing rates the descending impulses meet a increasing delay at the A-V node. Since A-V noda refractoriness is time dependent, conduction is a times preferentially shunted through the accessor pathways thus exaggerating the degree of pre-excitation. Occasionally, there are technical difficulties suc as ineffective or delayed input into the accessor pathways that preclude precise assessment yet it i sufficient to know some of the characteristics o recognized pathways. The lexicon of His bundl electrography includes: A = low right atrial intracardiac complex, H = depolarization of the Hi bundle, V = right ventricular intracardiac deflection Under normal conditions, the onset of the V deflection corresponds with the beginning of the surface QRS igure 4)

| athway | Conduction Characteristics |
|---|---|
| Normal Conduction | |
| Sinus Rhythm: | A-H interval (normal, 55-140 msec)<br>H-V interval (normal, 35-55msec) |
| Atrial Pacing: | A-H lengthens, H-V remains constant |
| Kent Pathway | |
| Sinus Rhythm: | 1) Delta wave precedes H deflection<br>2) Slurred QRS complexes |
| Atrial Pacing: | 1) H spike merges with or moves closer to QRS which widens until total or maximal pre-excitation occurs. |
| . James Fibers<br>(? basis for Lown-Ganong-Levine Syndrome) | |
| inus Rhythm:<br>Ventricle not truly pre-excited but A-V node is by-passed. | 1) Short P-R interval<br>2) No delta wave in ECG<br>3) Short A-H interval<br>3) Short A-H interval<br>4) Normal H-V interval |
| Artrial Pacing: | 1) A-H may lengthen slightly or be unchanged<br>2) H-V and QRS complex remain unchanged |
| . Mahaim type pre-excitation | |
| Sinus Rhythm: | 1) Normal A-H interval<br>Normal P-R interval<br>2) Short H-V interval<br>3) Delta wave is present |
| Atrial Pacing: | 1) A-H lengthens<br>2) H-V unchanged |

omplex. During ventricular pre-excitation, the lectrocardiographic delta wave may precede the ntracardiac V recording.

An exclusively retrograde operation of the accessory pathway may be recognized if the ventriculo-atrial conduction times remain unchanged during increasing rates of ventricular pacing and if they are consistently shorter than A-V conduction time during comparable atrial pacing rates. On the basis of such study Narula concluded that retrograde pre-excitation may be commoner than is presumed to exist[5] . Under these circumstances the patient may have a form of pre-excitation with consistently normal electro cardiograms during sinus rhythm.

The problem of multiple bypass pathways and the details of their differentiation is a complicated but an important subject. This unusual setting poses a relative contraindication of contemplated operative ablation and if unrecognized no benefits would accrue to the patient from such an extensive surgical procedure, (Figure 5). Briefly, the existence of multiple pathways may be suspected if [4] :

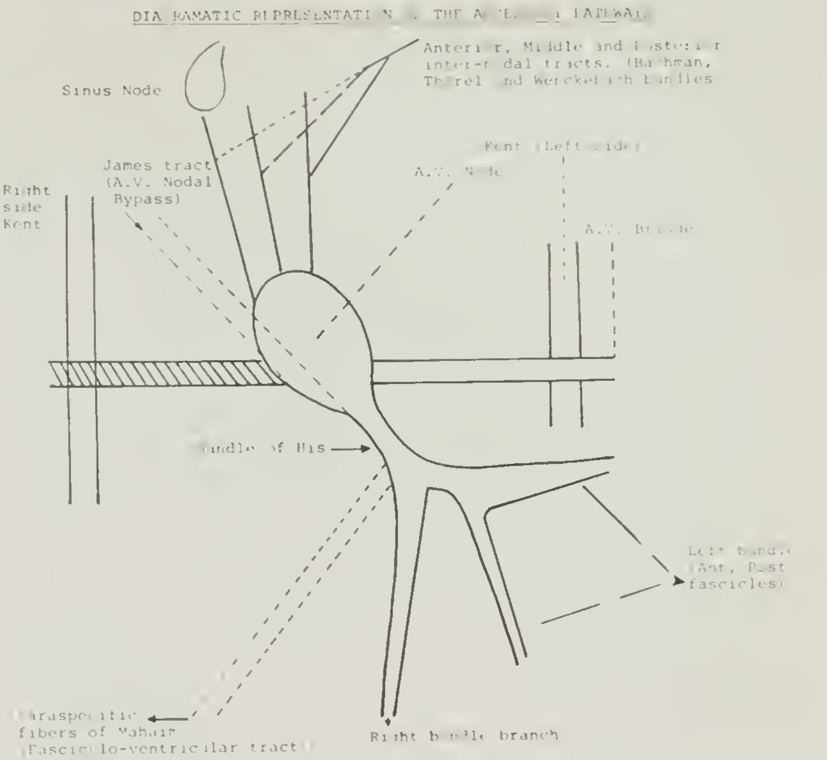
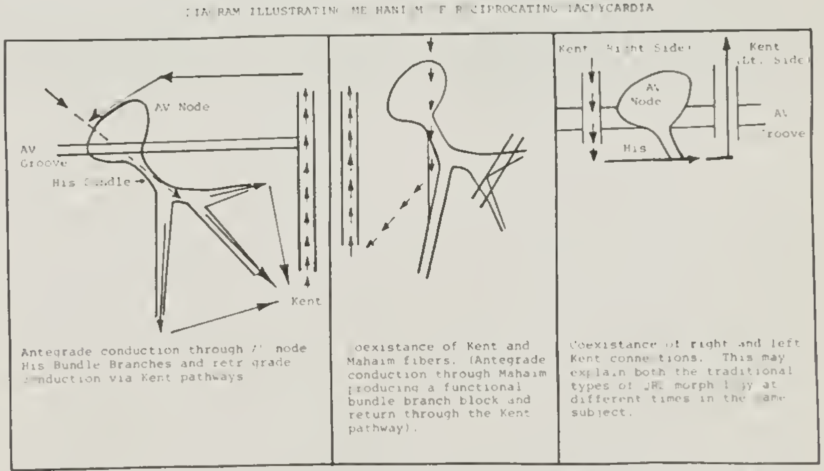

DIA RAMATIC REPRESENTATI N . THE A 'E. ATHWAY
Sinus Node
Anteri r, Middle and Posteri r inter-n dal tracts. (Bachman, Thorel and Wenckebach bundles
James tract (A.V. Nodal Bypass)
Right side Kent
Kent (Left side)
A.V. Node
A.V. Bundle
undle of His
Left bundle (Ant, Post fascicles)
Paraspecific fibers of Mahaim (Fascic lo-ventricular tract)
Right bundle branch

Figure 4: Diagrammatic representation of the normal and accessory pathways. Note the multiplicity of possible routes bypassing portions of the normal A-V conduction tissue. Kent bundles may be right or left sided. A combined James and Mahaim tract bypass system would effectively result in an electrocardiogram similar to that seen in the presence of Kent bundle conduction. Some of these pathways may only be operative in a retrograde fashion.

1) Two different tachycardias of two different rates can be induced or observed in the same patient. Each tachycardia has a different but specific and reproducible coupling interval (echo-zone). Such behavior results from the length of the circuits involved and the unique conduction characteristics of each pathway, (Figure 6).

2) If the elicited tachycardias have different but specific morphologies at any given time.



Antegrade conduction through A' node His Bundle Branches and retr grade nduction via Kent pathways

oexistance of Kent and Mahaim fibers. (Antegrade conduction through Mahaim producing a functional bundle branch block and return through the Kent pathway).

Coexistance of right and left Kent conne tions. This may explain both the traditional types of QRS morph l gy at different times in the ame subject.

Figure 5: Diagram illustrating possible mechanisms of reciprocating tachycardia in subjects with ventricular pre-excitation. Left panel: Antegrade conduction through the normal pathways and retrograde conduction via the Kent bundle results in a narrow QRS supraventricular tachycardia (the usual variety in Wolff-Parkinson-White syndrome]. Middle panel: Antegrade conduction through a Mahaim bundle and retrograde conduction through a Kent bundle produces a supraventricular tachycardia with bundle branch configuration of the QRS complexes. Right panel: A circus rhythm with antegrade right and retrograde left sided Kent bundle conduction. Either Kent bundle may conduct during sinus rhythm thereby resulting in traditional type "A" or type "B" pre-excitation in the same patient.

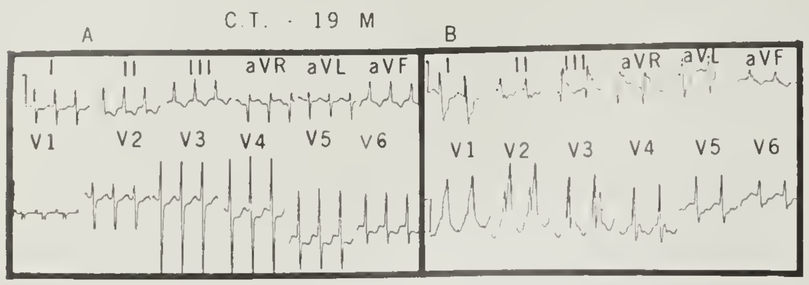


**Figure 6: Figure six shows two types of tachycardia in a 19 year old boy. Panel A: Narrow QRS complex morphology. Panel B: Wide QRS complex morphology. Note that the narrow QRS tachycardia occurs at a faster rate when compared with the wide QRS rhythm. This later observation makes rate related aberrancy unlikely. When confronted with such tracings, the possibility of two separate re-entrant circuits must be considered.**

3) The existence of Mahaim fibers is said to be uncovered by pacing the bundle of His[11] .

Criteria that may aid in the differentiation of A-V nodal re-entrant from accessory pathway dependent tachycardias include eccentric atrial activation sequence as evidenced from multiple atrial recording sites, demonstration of critical A-H prolongation for initiation of the tachycardia and discontinuous construction of $H_2$ - $H_2$ curves.

The attainable rate during macro-entrant tachycardias is a function of how quickly the accessory pathway recovers from a preceding activation front[12,13]. The earlier it recovers, greater is the number of impulses that it will conduct in a given unit of time. It follows therefore, that an accessory pathway must have a refractory period shorter than the cycle length of a tachycardia were it to be a participant in its genesis. This fact is of great importance in recognizing tachycardias due to other mechanisms. Also, the determination of refractory periods in either antegrade or retrograde direction allows prediction of the attainable heart rates during atrial fibrillation or reciprocating tachycardias and in assessment of the efficacy of anti-arrhythmic agents. Digitalis, for example, is considered to shorten the refractory period of the accessory pathway when used acutely and is deemed best avoided especially in patients with short refractory periods during atrial fibrillation[14] . Amiadarone, procaineamide, lidocaine, quinidine and ajamaline on the other hand, prolong the refractory periods of bypass pathways and are considered useful in the abolition of tachyarrhythmias in these patients.

Confirmation of the anomalous pathway location is usually accomplished by mapping studies done at surgery. The ventricular activation sequence is studied over the exposed heart and the site of earliest epicardial breakthrough determined. In selected cases where surgery is feasible, the incision is centered around the area of breakthrough and operative ablation accomplished. Such procedures have also been utilized for the abolition of intractable ventricular tachycardias where the presumed site of re-entry is sectioned at surgery. On occasion, ventricular pre-excitation in a patient with drug resistant life-threatening arrhythmias cannot be abolished at surgery. Under such circumstances, disruption of the His bundle area has been accomplished as a radical last resort technique[15] . When successful, this procedure effectively precludes A-V conduction and permanent artificial ventricular pacing is required.

Fortunately, the aforementioned surgical interventions are rarely required and commercially available pharmacological agents are usually successful when utilized as follows[16] :

1) Reciprocating tachycardia with QRS complexes of less than 0.12 second in duration - propranolol.
2) Atrial flutter or fibrillation with anomalous conduction (wide QRS) - lidocaine, procainamide or quinidine.
3) Prevention of reciprocating supraventricular tachycardia - propranolol.
4) Prevention of atrial fibrillation or flutter - quinidine.
5) Prevention of recurrent supraventricular tachhyarrhythmias resistant to single drug administration - propranolol and quinidine combined.

## ACKNOWLEDGEMENTS

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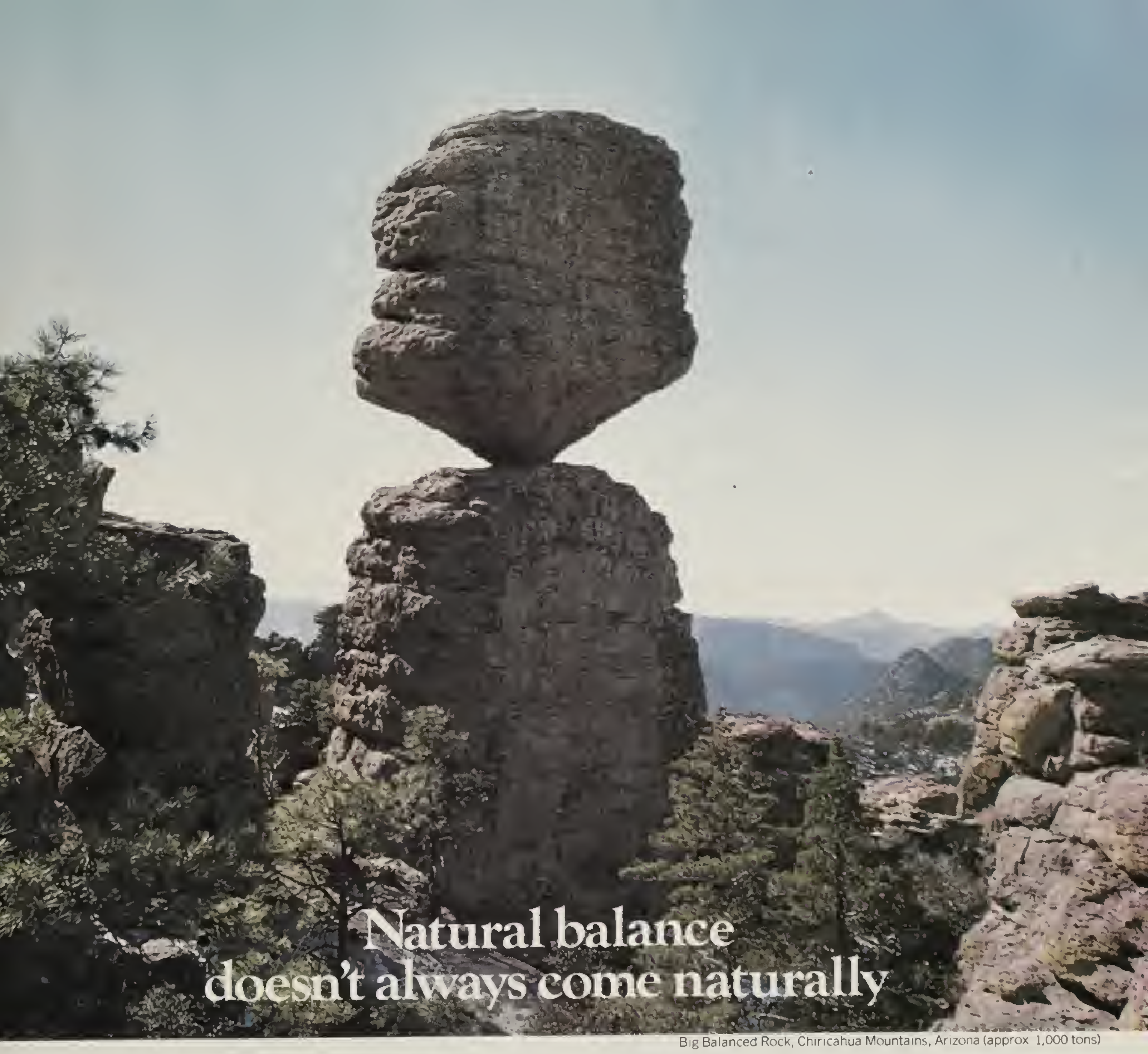

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BRIEF SUMMARY OF PRESCRIBING INFORMATION

*INDICATIONS. Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

*Effective*: Management of nausea and vomiting and dizziness associated with motion sickness.

*Possibly Effective*: Management of vertigo associated with diseases affecting the vestibular system.

Final classification of the less than effective indications requires further investigation.

CONTRAINDICATIONS. Administration of Antivert (meclizine HCl) during pregnancy or to women who may become pregnant is contraindicated in view of the teratogenic effect of the drug in rats.

The administration of meclizine to pregnant rats during the 12-15 day of gestation has produced cleft palate in the offspring. Limited studies using doses of over 100 mg./kg./day in rabbits and 10 mg./kg./day in pigs and monkeys did not show cleft palate. Congeners of meclizine have caused cleft palate in species other than the rat.

Meclizine HCl is contraindicated in individuals who have shown a previous hypersensitivity to it.

WARNINGS. Since drowsiness may, on occasion, occur with use of this drug, patients should be warned of this possibility and cautioned against driving a car or operating dangerous machinery.

*Usage in Children*. Clinical studies establishing safety and effectiveness in children have not been done; therefore, usage is not recommended in the pediatric age group.

*Usage in Pregnancy*. See "Contraindications."

ADVERSE REACTIONS. Drowsiness, dry mouth and, on rare occasions, blurred vision have been reported.

More detailed professional information available on request.

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# and economy

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**ontraindications:** Sulfonamide hypersensitivity; preg- ancy at term and during nursing period; infants less than wo months of age.

**Varnings:** Safety during pregnancy has not been estab- shed. Sulfonamides should not be used for group A eta-hemolytic streptococcal infections and will not eradi- ate or prevent sequelae (rheumatic fever, glomerulone- hritis) of such infections. Deaths from hypersensitivity reac- ons, agranulocytosis, aplastic anemia and other blood yscrasias have been reported and early clinical signs sore throat, fever, pallor, purpura or jaundice) may indi- ate serious blood disorders. Frequent CBC and urinalysis vith microscopic examination are recommended during ulfonamide therapy. Insufficient data on children under ix with chronic renal disease.

**Precautions:** Use cautiously in patients with impaired renal r hepatic function, severe allergy, bronchial asthma; in glu- ose-6-phosphate dehydrogenase-deficient individuals in vhom dose-related hemolysis may occur. Maintain ade- uate fluid intake to prevent crystalluria and stone formation.

**Adverse Reactions:** *Blood dyscrasias* (agranulocytosis, plastic anemia, thrombocytopenia, leukopenia, hemolytic nemia, purpura, hypoprothrombinemia and methemo- lobinemia); *allergic reactions* (erythema multiforme, skin ruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *gastrointestinal reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia), *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia as well as thyroid malignancies in rats following long-term administration. Cross-sensitivity with these agents may exist.

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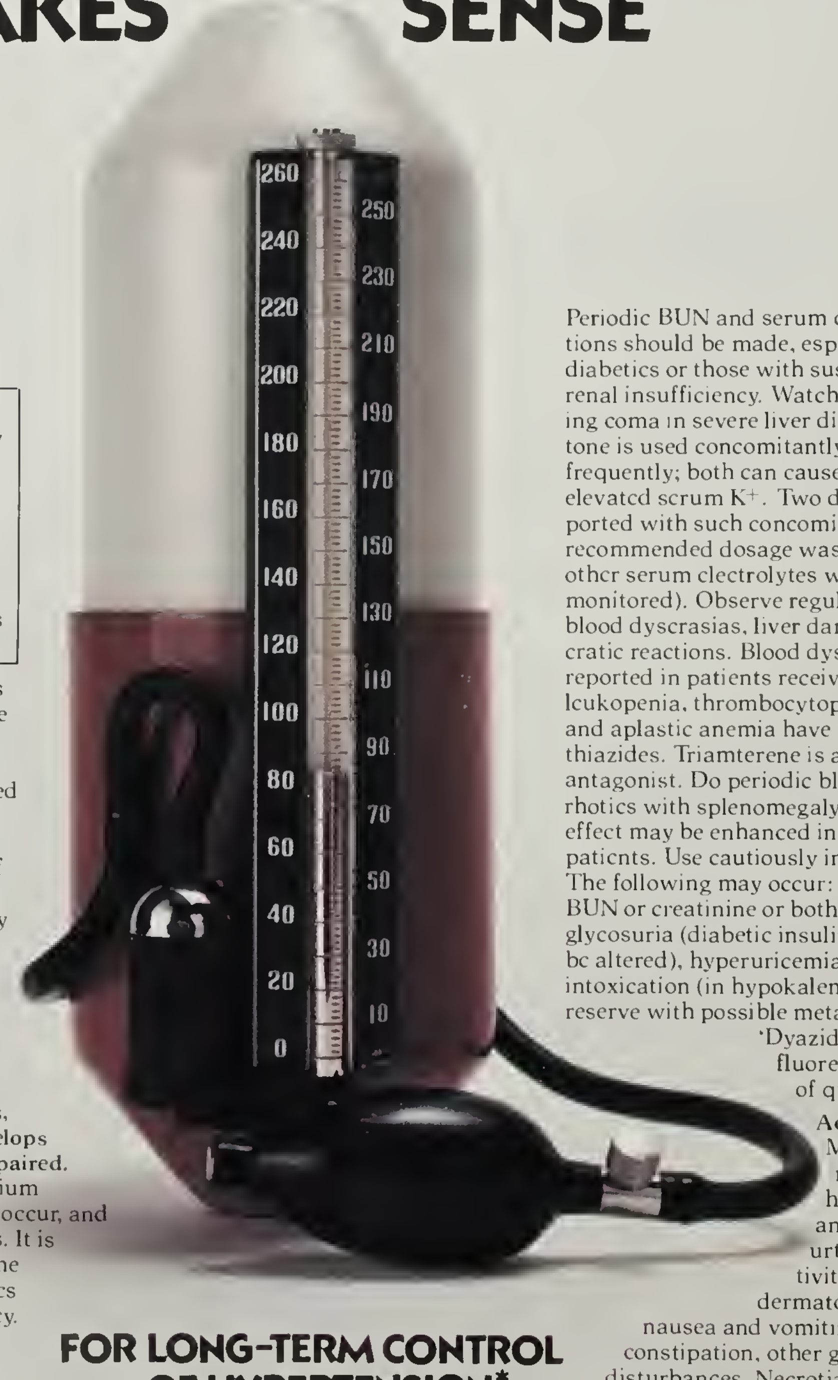

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This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

* **Indications:** When the combination represents the dosage determined by titration: Adjunctive therapy in edema associated with congestive heart failure, hepatic cirrhosis, the nephrotic syndrome. Corticosteroid and estrogen-induced edema, idiopathic edema; hypertension, when the potassium sparing action of triamterene is warranted. (See Box Warning.) Routine use of diuretics in healthy pregnant women is inappropriate; they are indicated in pregnancy only when edema is due to pathological causes.

**Contraindications:** Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

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**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum $K^+$ frequently; both can cause $K^+$ retention and elevated serum $K^+$. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis.
'Dyazide' interferes with fluorescent measurement of quinidine.

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**Supplied:** Bottles of 100 and 1000 capsules; Single Unit Packages of 100 (intended for institutional use only).

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## *Seminars in Chest Medicine*

# The Value of Radioisotopes in Pulmonary Medicine

David J. Kanarek, M.D.

ditors
obert J. Clark, M.D.
ynn M. Taussig, M.D.
Villiam C. Weese, M.D.

The advent of radioisotope tracers and imaging evices has produced a host of diagnostic and thera-eutic aids as well as a number of research tools which how promise of developing into valuable clinical aids. his article will explore the practical uses of these racers and touch on some of the future possibilities.

Several different tracers are in common use. To tudy regional lung perfusion, microspheres or human lbumin, 15 to 30μ in size are labelled with $^{131}$I or $^{99}$Tc and injected intravenously. Since they have pproximately the same density as red cells, the abelled particles are distributed according to regional ung perfusion. Areas deficient in perfusion will be leficientin labelled particles relative to other regions. he radioactive gas, $^{133}$Xe, is favored for the valuation of regional ventilation and lung volume. egional ventilation is measured by imaging either the listribution of an inhaled bolus of $^{133}$Xe mixed with ir or, during expiration, by following the washout of $^{133}$Xe during successive tidal breaths after a pro-onged period of equilibration with $^{133}$Xe by closed ircuit breathing from a spirometer containing some adioactive gas. An image of the lungs at the end of he equilbration period shows the regional distribution f lung volume. It is important that both perfusion nd ventilation studies be carried out in the same osition since both these functions are gravity lependent.

Imaging is usually carried out by a scintillation amera (the Anger camera) supported by computers of arying complexity. The camera resolution is about 1 cm at its face. Data can be presented either visually, as in the routine perfusion scan for pulmonary emboli, or numerically for quantification as is required for prediction of loss of function following surgical resection of lung tissue. Other gases such as the cyclotron-produced $^{13}$N and $^{15}$O are used for special purposes while labelled substances such as gallium ($^{61}$Ga) or strontium may be used to detect inflammation or tumors within the lungs.

### Pulmonary Physiology.

Radioisotope studies had their initial use in showing the regional gravity-related gradations of ventilation and perfusion. These techniques and principles are now being applied to more specific patient problems. For example, the fall in $PaO_2$ with the application of positive end expiratory pressure (PEEP) to a subject with unilateral lung disease (fig. 1) was shown to be due to PEEP producing a shift of blood flow from the normal to the consolidated lung . In another study[2] diaphragmatic breathing was shown to have little effect on the distribution of ventilation, thus casting doubt on at least one rationale given for teaching this technique to patients with chronic obstructive lung disease.

### Pulmonary Thromboemolic Disease.

The commonest use of radioactive tracers has been in the diagnosis of pulmonary thromboembolic disease by a perfusion scan. The strongest diagnostic feature is single or multiple segmental perfusion defects without a corresponding ventilation defect. Segmental defects are not specific for thromboembolism since they only indicate a decrease in regional blood flow, which may be caused by other factors such as parenchymal lung disease. However, when clinical

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From: Harvard Medical School and Massachusetts General Hospital, Boston, Mass. 02114. Dr. Kanarek, Dir. Pulmonary Function Laboratory, Massachusetts General Hospital, Assist. Prof. of Medicine Harvard Medical School.

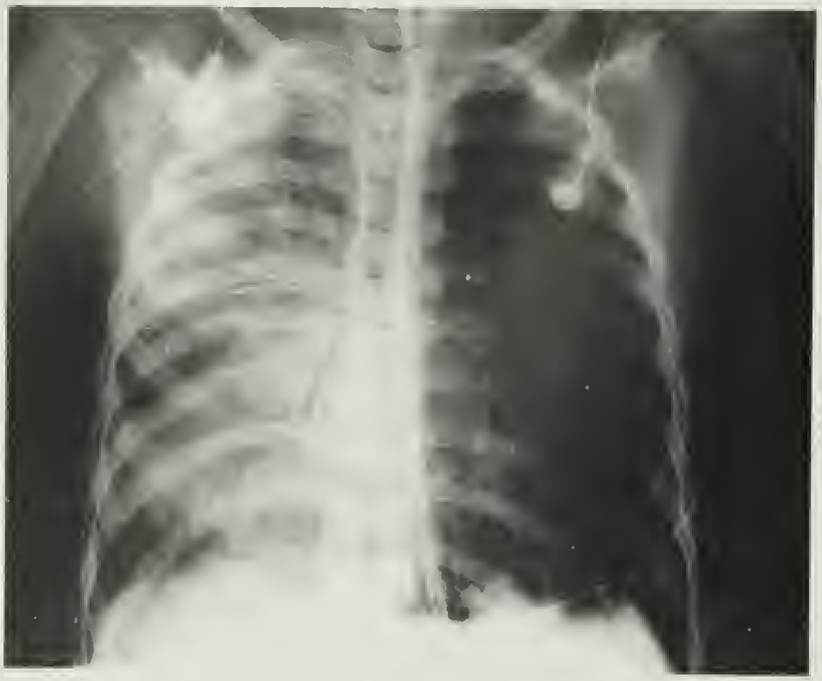


Fig. 1a shows diffuse involvement of the right lung.

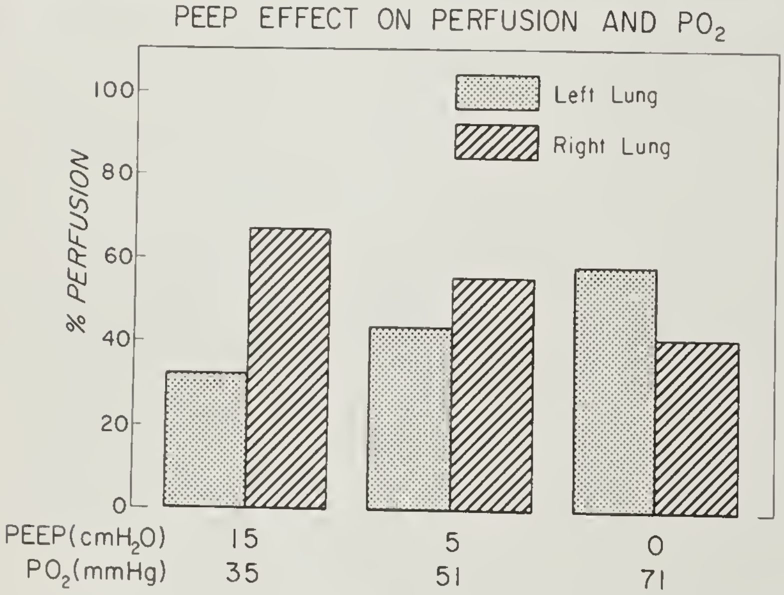


Fig. 1b demonstrates the shifts in pulmonary perfusion with associated changes in P02 consequent on changing PEEP.

features support the diagnosis of thromboembolism, segmental perfusion defects are very helpful in diagnosis. Perfusion scans, while not specific, are very sensitive and a normal four view perfusion scan virtually excludes the diagnosis of pulmonary embolism. In many cases, however, clinical suspicion of pulmonary embolism supported by a scan compatible with the diagnosis needs to be complemented by angiography for complete evaluation. This is particularly true of subjects with diffuse obstructive lung disease in whom the parenchymal dysfunction produces widespread perfusion and ventilation defects often making it difficult to pick out segmental defects produced by pulmonary embolism. Repeat scans which show fresh defects with disappearance of previous defects support the diagnosis of pulmonary embolism.

There are other conditions which produce perfusion defects and need to be differentiated from pulmonary embolism. Amongst these are carcinoma of the lung, pneumonia, pleural effusion and pulmonary edema. Correlation of the scan and chest x-ray should help to resolve most of these diagnostic dilemmas.

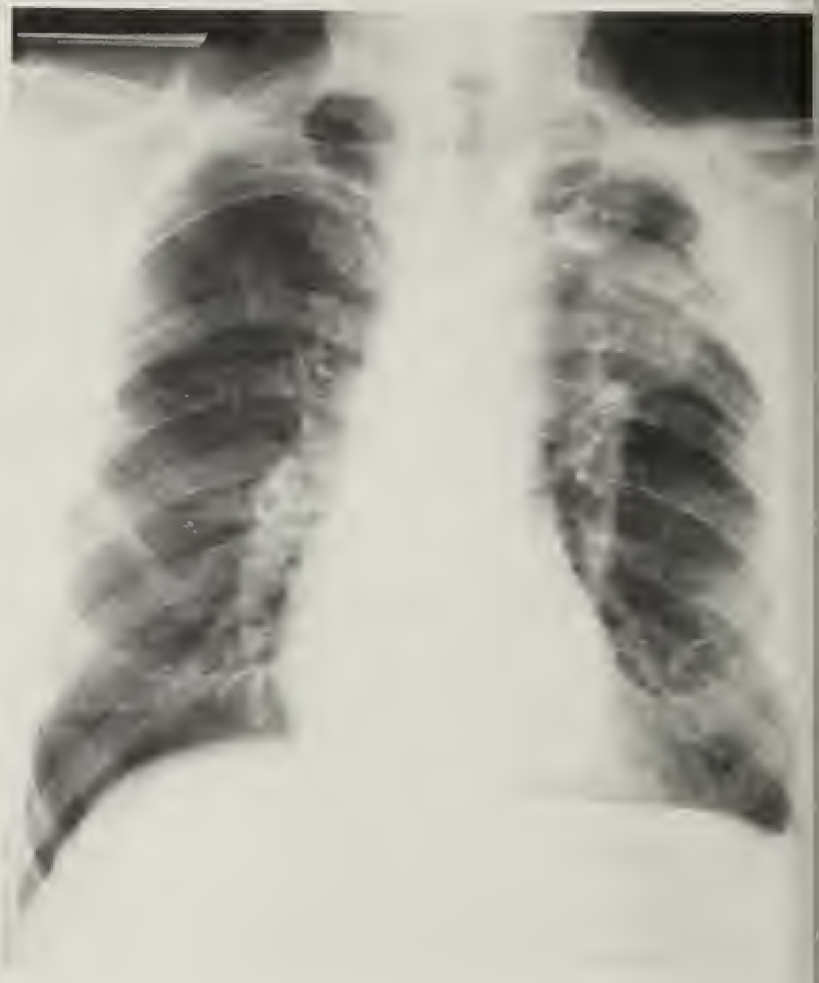


Fig. 2 Chest roentgenogram demonstrating left upper lobe larg cell carcinoma.

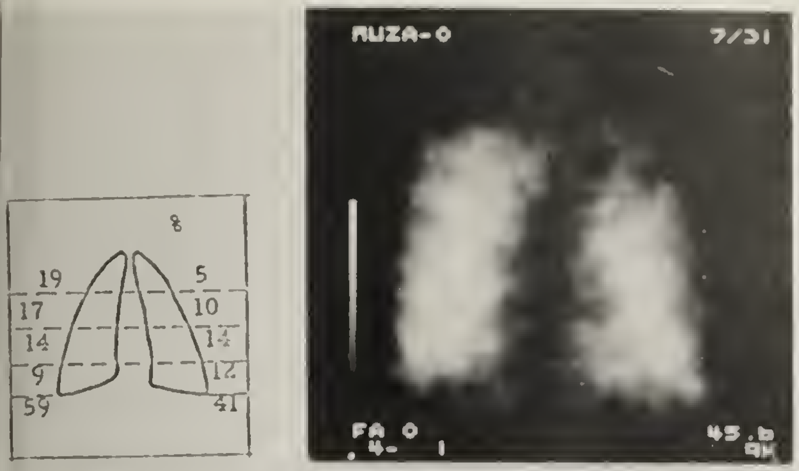
## Lung Cancer.

Assessment of regional ventilation and perfusion in patients with pulmonary neoplasia is of value in 1) preresectional evaluation of the ability to withstand the loss of lung tissue, 2) the planning of radiotherapy portals and 3) prognostic evaluation.

Many patients with cancer who are candidates for pneumonectomy or lobectomy have underlying severe obstructive lung disease with marked functional impairment. The functional impairment, as estimated, for example, by the $FEV_{1.0}$ (forced expiratory volume in 1 second) may be so severe that an accurate estimate of any further loss as a result of the proposed resectional surgery becomes imperative. The loss of function may be estimated by considering that the percentage of perfusion and ventilation which, preoperatively, derives from the region to be resected is the potential functional loss. Either a routine particulate perfusion scan or a $^{133}Xe$ ventilation scan may be used for the measurement. Consider for example, a patient with a left upper lobe tumor (Fig. 2), whose involved lobe accounts for 15% of total ventilation (Fig. 3) (i.e., 85% of function is from the uninvolved lung) and whose preoperative $FEV_{1.0}$ is 1.25 liters. Post-lobectomy $FEV_{1.0}$ can be estimated by the following formula:

(Preoperative $FEV_{1.0}$ ) x (1% function of uninvolved lung( = 1.25 x 0.85 = 1.05 liters,

a reasonable postoperative value. Similarly, a pneumonectomy would involve the loss of 40% of function (Fig. 3); postoperative $FEV_{1.0}$ = 1.25 x 0.60 = 0.75



**ig. 3 The single-breath ventilation scintigram shows a deficit in ventilation in the left upper zone. On the left, the regional count rates expressed as a percentage of the total count rate is presented.**

iters, a value militating against a successful functional outcome. These split function studies are indicated when the $\text{FEV}_{1.0}$ $< 2$ liters, the MBC $<50\%$ predicted or when other studies show severe functional impairment from any cause. When lung carcinoma in a patient with severe physiological derangement is to be treated by radio-therapy, it is prudent to obtain a regional scan so the area to be irradiated does not inadvertently encroach upon regions which provide a major portion of residual pulmonary function. The patient in Fig. 2 was recommended for radiation therapy rather than surgical resection. Fig. 4 showed that only the left lower zone was well ventilated, as assessed by a washout study. Thus, the radiation to be given to the left hilum and left upper zone had to be carefully planned to avoid the left lower zone. Also, it has been shown that where less than one-third of total perfusion goes to the lung involved by the carcinoma, successful resection of that lung is unlikely[1].

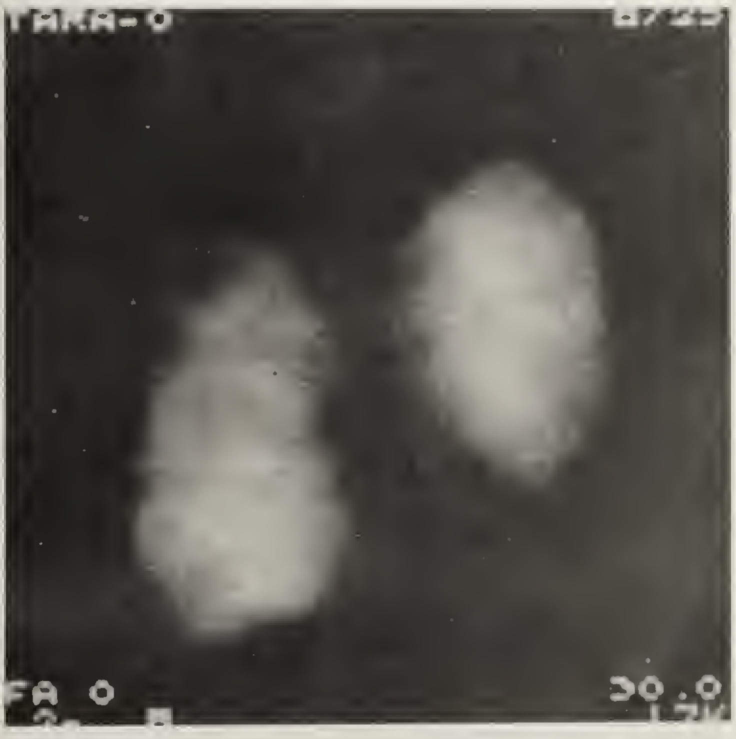


**Fig. 4 This washout scintigram, taken after the patient had been breathing room air for two-and-a-half minutes, shows that N13 has only been eliminated from the left lower zone and a small right upper zone region. The remainder of the lung fields reflects poor ventilation.**

### Bullous Lung Disease.

The decision to remove a large bulla from a lung may be facilitated by scintigrams of ventilation which will indicate whether the bulla is well ventilated, i.e., acts as a large deadspace or is poorly ventilated and functions mainly as a space-occupying mass. In addition, the inspiratory ventilation and expiratory washout studies of the remaining lung fields will help show whether the cyst is single and localized and whether there are other involved areas, not so obvious on chest x-ray, which also have poor function.

### Cardiopulmonary Applications.

When a patient is put into the left oblique position and a blood pool tracer (such as 99mTc) injected, the right ventricular cavity can be visualized, and the contractility examined and ejection fraction calculated. Although definitive studies fully confirming the value of this information have not yet been published, initial experience is encouraging. For example, the normal contraction and right ventricular emptying seen in patients with severe airway obstruction, dyspnea and no previous history of cor plumonale provides good evidence that digitalis will rarely help in the management of these patients. When pulmonary venous hypertension is present, there is a shift of perfusion from the base to the apex. Right-to-left shunts have been diagnosed using intravascular tracers which have appeared in the left heart and aorta before the lungs were fully perfused.

### Potential Future Applications.

Although increased lung water is frequently incriminated in the pathogenesis of a number of respiratory problems, current methods of measuring the amount of water present, even under ideal circumstances, are unsatisfactory. A method, using cyclotron-produced $C^{15}0$ in the form of $C\ ^{15}\ O$ as in intravascular label and $H_2 0$ as a diffusible label, has been developed and validated in an isolated lung model which accurately measures the fluid compartments of the lung in terms of both total and regional volumes[4]. If this experience can be extended to the intact organism, considerable valuable information may accrue. Also using $C\ _{15}\ 0$, another study has shown that occult intrapulmonary hemorrhage can be diagnosed[5]. Finally, aerosols labelled with radioactive tracers are being used in studies in mucociliary activity, regional ventilation and particle distribution[6].

This article of necessity has only given a brief outline of the uses of radioactive tracers. The field is still young and, with further development of tracers and imaging techniques there is little doubt that further expansion will occur.

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*Emotional Disorders*

# Cabin Fever

William B. McGrath, M.D.

Even the most civilized (civil) individuals cannot tolerate prolonged proximity. This is a fact. Yet no reference to it will be found in our textbooks. And people go on ignoring the time-bomb of uninterrupted togetherness.

Cabin fever can be a proximate cause of the withering of romance and the shattering of friendship. I can claim some expertise. Before going to medical school I spent several years in Alaska. Two men who had been buddies joined me in renting a shack, sharing on-shore expenses. A spell of foul weather grounded us. On the fourth day one of the men became enraged at some trivial inconvenience. He literally threw his smaller friend through the window, injuring him.

This violence was not related to pathological intoxication or any kind of seizure disorder or hypoglycemia. It was cabin fever. Some of you may have witnessed similar explosions on extended hunting or fishing trips. A friend is a potential enemy, more so than a stranger.

A devoted couple take a vacation on a ship or at a resort. They are inseparable, sight-seeing, playing, dining, sleeping. Before a week has passed the man (usually) suggests that his wife go shopping or otherwise entertain herself. He hints that he wants to be alone, possibly to write letters or take a nap. Reassuring him that she will not disturb him and that she is content, she sits there doing her (expletive deleted) needlepoint.

By her very presence she is provoking an outburst of insensate antagonism. Uncomprehending and unable to defend herself, she will be frightened by his irrational abuse. She and her husband each will be privately troubled by the fact that hostility was so close to the surface, and for a long time they will feel slightly estranged.

Cabin fever can readily be recognized in the constant bickering of retired couples who spend too much time together. Young married folk seem to have to learn by their own disastrous experiences not to share all leisure time exclusively with one other couple who seem delightfully compatible.

Cabin fever may be an unrelieved determinant in many instances of the battered child syndrome. The child ceases to be a child and becomes a loud and constant warning signal of the young mother's inadequacy. It obviously contributes to the high rate of murders and senseless assaults in jails and penitentiaries which provide no space or time for privacy.

The old saw, familiarity breeds contempt, does not provide an explanation. Cabin fever is perhaps more atavistic. An analogous metaphor is the rubbing of two sticks together, heating them until one ignites.

Or we are reminded of the treacherous ambivalence inherent in any relationship, inherent somewhat impersonally in the very fact that there is a relationship. Whatever the verbal disclaimers, the assumption of a role implies that something is expected. Any relationship to some degree suffocates a person with real and self-imposed responsibilities and walls out his freedom just to be himself.

To prevent cabin fever is simply to recognize the conditions in which it is generated and to take intelligent precautions to avoid or avert them. To be considerate is to give a person a gracious invitation and opportunity once in a while to go outdoors and breathe in whatever open space he needs.

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*Seminars in Endocrinology and Metabolism*

# Senile Osteoporosis

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Editors:
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Senile osteoporosis was characterized by Albright as a disease of "too little bone mineral." The incidence of this condition is not known because of the various criteria used for the diagnosis of this disorder by different authors. Using either morphometry or osteodensitometry, Meema estimated that 50 per cent of women over age 60 have significantly less bone than controls. If bone biopsies of the vertebrae of iliac crest were used to define this process, the incidence would most likely be greater.

Women are affected approximately eight times as frequently as men. The examination of the bone mineral mass in men and women shows an equal decline up to the time of the menopause with an accelerated decline in women after this time. Various theories have been put forward to explain this phenomena, ranging from deceased calcium absorption, subclinical vitamin D deficiency, changes in parathyroid, thyroid or cortisone secretion and estrogen deficiency. To date only estrogen supplementation has been shown to affect the incidence of osteoporosis. Using estrogen supplements, Meema has shown that the incidence of osteoporosis is post-menopausal females on estrogens was significantly less than in women not given estrogen supplements.

## Pathogenesis

The skeleton is composed of two types of bone, compact and trabecular. Compact bone is found in the cortex and is composed of a lamellar structure formed by units of concentric cylinders of fibers. At the center of each unit, which is known as an osteon, there are haversian canals carrying blood vessels. In histologic section of bone, the cylinders appear as rings and the lamellae as lines. Between every few cylinderical layers of collagen fiber are trapped the cells that made the collagen. Canaliculi connect the cells of different layers.

Trabecular bone has a branching structure and a relatively large surface area. This type of bone, because of its larger surface for bone formation and resorbtion, would be expected to manifest the changes of osteoporosis to a greater degree than compact bone. Indeed, most fractures in osteoporosis occur in areas with relatively large amounts of trabecular bone as compared with compact bone, e.g., the vertebrae and the femur.

Mechanically, a vertebra can be described as two plates kept apart by thin vertical struts tied together transversely at intervals. In osteoporosis, as the diameter of the vertical trabeculi decrease and the transverse ties disappear, the load needed to produce failure rapidly becomes unexpectedly small, and sudden collapse occurs with small stresses.

Increased bone loss in osteoporosis could be due in theory to a number of different causes. Analysis of the available evidence leads us to conclude that, in osteoporosis, bone resoption remains unchanged, but bone formation is decreased. At a cellular level, this can be due either to a reduced osteoblastic activity or to a change in the length of time cells spend in the osteoblastic phase. To date, direct measurements of these properties of osteoblasts have not been made.

## Clinical Features

Pain is the main symptom of osteoporosis, usually the result of fractures. Episodic back pain occurs and is probably due to crush fractures of the vertebrae. The pain usually lasts approximately one month. Other patients have little in the way of pain but are found to have loss of height and x-ray evidence of crushed vertebrae. In some patients, scoliosis leads to deformity of the thoracic cage and pulmonary impairment. There are remarkably few neurologic consequences.

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Diagnosis

The cardinal roentgenologic feature of osteoporosis is loss of bone tissue with a disproportionate loss of density of trabecular bone.

Conventional x-ray examination is an insensitive way of diagnosing osteoporosis. By the time this process is visible on routine x-ray, the process is already far advanced. The diagnostic criteris will not be discussed as they can be found in any textbook of radiology.

In order to institute effective treatment, the disease must be diagnosed before it is evident on plain x-ray films.

**Biopsy**. Biopsy is the standard by which all other techniques should be judged. Biopsy may be done at the iliac crest, as this will provide an ample specimen and usually reflects vertebral changes. Other conditions simulating osteoporosis, i.e., multiple myeloma, hyperparathyroidism, and osteomalacia, may also be diagnosed by this procedure. Sections of undecalcified trabecular bone, embedded in paraffin and stained by the Van Kossa method are quite sufficient for diagnosis.

There are a number of quantitative measurements that are now in use or are being evaluated.

**Photon Absorption**. Photon absorptiometry makes use of the absorption of radiation of a known amount of energy by bone by comparing this with a suitable standard. The bone mineral density can then be calculated. It can be used only in the peripheral skeleton, and presents some problems because osteoporosis is usually initially manifested in the axial skeleton. There is good statistical evidence that changes in the mineral content of the hand reflect changes in the axial skeleton.

**Morphometry**. This radiologic technique permits measurement of the thickness of cortical bone, and, with modifications, permits estimation of total tubular bone width, medullary cavity width, cortical thickness and cortical bone area. Again, measurements can be made only on the peripheral skeleton, which may or may not accurately reflect axial change.

**X-ray Spectrophotometry**. X-ray spectrophotometry is a new technique in which attenuation of two radiation energies is measured with a dual beam collimated to a narrow slit. This procedure has a great deal of promise, because sites in both the peripheral and axial skeleton can be evaluated for mineral density. It is at present only a research procedure.

**CAT Scanner**. A recent report has used the CAT scanner to plot the density of a cross section of peripheral skeleton using delta numbers. This technique must be further evaluated as to its accuracy and its ability to be used for the axial skeleton.

Treatment

There have been a number of treatment regimens each claiming some success in the treatment o prevention of osteoporosis. These regimens hav included estrogens, calcitonin, phosphate, calcium vitamin D, and fluoride, either individually or i various combinations.

To date, only three modes of therapy have com close to being evaluated for a long enough period o time to have had some effect on the osteoporiti process.

Estrogen given at the time of the menopaus appears to delay the onset of osteoporosis. It may ac by decreasing the number of basic multicellular unit by inhibiting the number of osteoprogenitor cell transforming into osteoclasts. This would decreas bone reabsorption.

Calcium, vitamin D, and fluoride have been used b the Mayo Clinic group for a number of years. Thei data, based on bone biopsy, indicate an absolut increase in new bone formation. There seems to b some question as to the adequacy of this new bone i terms of its structural characteristics, and furthe studies are indicated.

A promising new treatment has recently bee reported. It is based on the theoretical consideratio that phosphate modulates the conversion of osteoclasts to osteoblasts and also increases the activity o osteoblasts. By infusing phosphate to produce thes effects and alternating these infusions with calciur infusions to inhibit parathyroid hormone release, thes authors found a marked increase in new bon formation after a year of treatment, by radiologic pathologic, and clinical factors. Drawbacks includ prolonged frequent infusions which have to b administered in a hospital for prolonged periods o time. Other considerations include the possibility o extraosseous calcification (including renal calcification), although these complications were not foun during one year of treatment. These results woul have to be confirmed by other investigators and a more convenient way of administrating this therap would have to be worked out to make it generall effective.

To date, calcitonin, diphosphonate, oral phosphate and calcium infusions have not been effective whe systematically evaluated.

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*Seminars in*
*Gastroenterology*
*and Liver Disease*

# Pyrrolizidine (Senecio) Poisoning in Arizona: Severe Liver Damage Due To Herbal Teas

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The pyrrolzidine alkaloids are hepatotoxic alkaloids found in a large number of widely distributed plants [1]. One of these plants, Senecio longilobus, is native to the deserts of the southwestern United States and northern Mexico where it is found in profusion. Veterinarians and farmers have long recognized that ingestion of this plant by livestock often causes severe hepatic damage and death [1]. Human intoxication has occurred either by contamination of grain products by pyrrolizidine alkaloids or by ingestion of "bush teas" brewed as folk remedies from plants containing pyrrolizidine alkaloids. Human pyrrolizidine poisoning was recognized almost sixty years ago in South Africa [2]. but has since been found in many "third world" countries and particularly in Jamaica where the disease is endemic [3]. Recent massive outbreaks of hepatic veno-occlusive disease due to pyrrolizidine poisoning have been recorded in Afghanistan and India [4,5]. Until this time, only one patient with possible pyrrolizidine-induced hepatic veno-occlusive disease had been recognized in the United States and that person had ingested the material in her native country of Ecuador [6]. In the past nine months, we have discovered two pediatric patients, both Arizona natives, with pyrrolizidine intoxication resulting from ingestion of Senecio longilobus extracts in the form of herbal tea. The herbs had been purchased in Arizona.

## CASE REPORTS:

Patient One: A six month old well-nourished Mexican-American female was admitted to Tucson Medical Center with a history of emesis and irritability for one day prior to admission. She had been seen by her pediatrician two weeks prior to admission for symptoms of a mild respiratory infection; physical examination at that time was normal. Admission physical examination revealed an irritable infant with a distended abdomen and a prominent abdominal venous pattern; her liver span was 9cm and her spleen was easily palpable. An initial SGOT was 794 and bilirubin 0.5mg%; her prothrombin time, originally 12.8 seconds, rose to 16.4 seconds. Radiological examination indicated the presence of ascites and a right pleural effusion. The ascitic fluid was clear, yellow and contained 1.3Gm% protein and 5 lymphocytes per $mm^3$. A needle liver biopsy was then performed revealing normal hepatic architecture and intact hepatocytes. However, the sinusoids were markedly distended with mature erythrocytes. An echocardiogram, inferior venacavagram and hepatic venogram were normal.

At this point, we learned that the patient had been fed large quantities of tea prepared by infusion of a locally marketed herb known as gordolobo yerba. This tea is widely used as a gargle and cough medicine by the Mexican-American population. The herb was identified as Senecio longilobus. Analysis of an extract of the specimen from which the patient's tea had been prepared revealed large quantities of toxic pyrrolizidine alkaloids. A liver biopsy obtained two months after the initial biopsy revealed extensive central, portal and sinusoidal fibrosis. A third liver biopsy obtained six months later revealed cirrhosis.

Patient Two: A two month old Mexican-American male was admitted to Good Samaritan Hospital in Phoenix with a history of lethargy, emesis and hematemesis for one day prior to admission. On physical examination, the patient was obviously icteric with marked hepatomegaly; he subsequently developed both splenomegaly and ascites. Initial SGOT was 10,640, bilirubin 10.0mg% and prothrombin time 96 seconds, profound hypoglycemia was also noted. Despite vigorous therapy including two exchange transfusions, the patient died six days

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following admission. Post-mortem examination of the liver revealed sinusoidal and central vein congestion with necrosis of hepatocytes most marked in central areas.

For five days prior to admission, the patient had been fed an herbal tea as a cough medicine. The herb had been retailed in a popcorn packet by a pharmacist. It was identified as Senecio longilobus, and analysis of the herb revealed large quantities of toxic pyrrolizidine alkaloids.

## DISCUSSION:

The clinical course of the patients agrees with previous descriptions of hepatic veno-occlusive disease due to pyrrolizidine intoxication [2-5]. In a typical case, a patient with pyrrolizidine poisoning, most often an infant or young child, develops the acute onset of nausea, emesis, abdominal pain and distension while physical examination reveals hepatomegaly and possible ascites. When faced with this constellation of findings, especially in a Mexican-American patient, the physician should question the patients or the parents about possible ingestion of gordolobo yerba and attempt should be made to obtain a specimen of the herb for identification and chemical analysis. The diagnosis is confirmed by a needle liver biopsy demonstrating congested hepatic sinusoids and central veins, possible centrilobular hepatocyte necrosis and intact hepatic architecture and by the absence of obstruction or increased pressure in the heart, inferior vena cava or hepatic veins. Patients in the acute phase may die or progress to frank cirrhosis [3]; whether or not complete recovery ever occurs is still uncertain. Treatment in the acute phase is strictly supportive. Should cirrhosis develop, treatment may involve placement of the patient on a low sodium diet and a diuretic regimen to control portal hypertension.

Use of herbal medicines is widespread in the Mexican-American population. Gordolobo yerba is especially well known and used as a gargle or cough medicine in the form of tea. Gordolobo yerba is usually made from a Gnaphalium species; Senecio longilobus closely resembles the Gnaphalium plant and may be unwittingly used in place of the harmless Gnaphalium. The Senecio plant has been easily obtainable from herb stores in the Tucson - Phoenix areas or can be collected wild in the deserts of the southwestern United States or northern Mexico. Pyrrolizidine poisoning may well be an "iceberg disease" in the United States. Human veno-occlusive disease has been identified only after the sporadic ingestion of large doses of the alkaloids [1]. However, the possible contribution of ingestion of repeated small doses of the alkaloids over prolonged periods to the incidence of cryptogenic cirrhosis, hepatoma or chronic lung diseases has not been determined. In experimental animals, repeated administration of small doses produces chronic liver disease which progresses even after exposure to the alkaloids has been discont-ued.[1,7] Hepatoma, chronic lung disease and cor pulmonale have been similarly produced[1, 8].

## SUMMARY:

Hepatic veno-occlusive disease due to pyrrolizidin poisoning exists in Arizona. The hepatotoxic alkaloi is ingested in the form of a tea brewed from an herl known as gordolobo yerba. Patients of all ages ar affected but young children are most susceptible to th agent. The typical patient is Mexican-American anc presents with acutely developing nausea, emesis abdominal pain and distension, hepatomegaly anc ascites. The diagnosis is strongly suggested by a live biopsy demonstrating congested hepatic sinusoids anc central veins with possible centrilobular hepatocyt necrosis in the presence of normal hepatic architecture other possible causes of hepatic venous occlusioi should be absent. In this setting, the diagnosis i confirmed by obtaining a specimen of the ingestec herb for identification and chemical analysis; th responsible herb is Senecio longilobus and the sampl should contain large concentrations of pyrrolizidin alkaloids. The possible contribution of pyrrolizidin poisoning to the development of chronic liver disease hepatoma and chronic lung disease in the Mexican American population is as yet unknown but require further study.

The extent of the problem of pyrrolizidine intoxica- tion in Arizona is as yet unknown. If any patient presents with the appropriate historical, physical, anc laboratory findings, a sample of the ingested herb should be sent to Dr. Ryan Huxtable, Associate Professor of Pharmacology at the University o Arizona Health Sciences Center. Dr. Huxtable's laboratory will perform the plant identification and chemical analysis to search for pyrrolizidine alkaloids.

## ACKNOWLEDGEMENTS:

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*Neurology*

# Recent Advances in the Neurochemistry of Huntington's Disease

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Until recently, Huntington's Disease (HD) was an obscure neurological disorder that received little clinical or scientific attention. However, with the discovery of the neurochemical basis of Parkinson's Disease - and the subsequent development of levodopa therapy - interest in HD awakened overnight.

First described by George Huntington in 1872, HD is an autosomal - dominant, progressive neurological disorder. It is characterized by dementia and bizarre involuntary movements. It occurs in two forms: the juvenile, or Westphal, variant and the more common adult-onset form. Adult-onset HD appears during middle-age and afflicts 5 to 10 in every 100,000 individuals [1].

As a rule, the motor disorders and dementia progress together; however, either may appear first. Characteristically, the patient's movements are abrupt and uncontrolled; involving the trunk muscles and the proximal and distal extremeties [2]. Death usually results from respiratory failure or dysphagia within 15-20 years after the first symptoms appear [3,4].

At autopsy, an HD brain shows severe atrophy because of diffuse neuronal degeneration. The frontal cortex and basal ganglia are particularly effected because of the selective loss of small, Golgi type II interneurons in these areas. Histological studies of HD neuronal tissue reveal axonal degeneration, disrupted mitochondria, increased smooth endoplasmic reticulum and accumulation of lipofuscin (a so-called "aging pigment"). Because of these changes, it has been suggested that the atrophy of HD may not be entirely reactive, and that the disease may involve a generalized "metabolic disorder" of membranes [2].

Most of our understanding of HD is the direct result of recent studies, using post-mortem brain tissue, that have pinpointed the neurochemical lesions of the disease. These lesions involve both the enzymes that synthesize neurotransmitters and the receptors that bind them and allow information to be transferred from one neuron to another.

What is a receptor? The current definition is that of a drug-binding macromolecule that transduces a chemical message into a chemical or electrical signal [5]. Consequently, receptor alterations are the key to both the cause, and the treatment, of many neurological disorders.

Experiments indicate that there is a significant decrease in the number of muscarinic cholinergic receptors - and the activity of the acetylcholine-synthesizing enzyme, choline acetyltransferase - in the HD corpus straitum [6-11]. This suggests that the instrasiatal cholinergic neurons, and the neurons receiving cholinergic input, have degenerated. However, the remaining muscarinic receptors retain their normal affinity for acetylcholine (Ach) [9,12].

Glutamic acid decarboxylase (GAD), the enzyme that synthesizes the neurotransmitter gamma-aminobutyric acid (GABA), is also decreased in the HD corpus straitum [8,9,13]. The decrease in both GABA neurons and cholinergic receptors suggests that some of the GABA neurons normally receive

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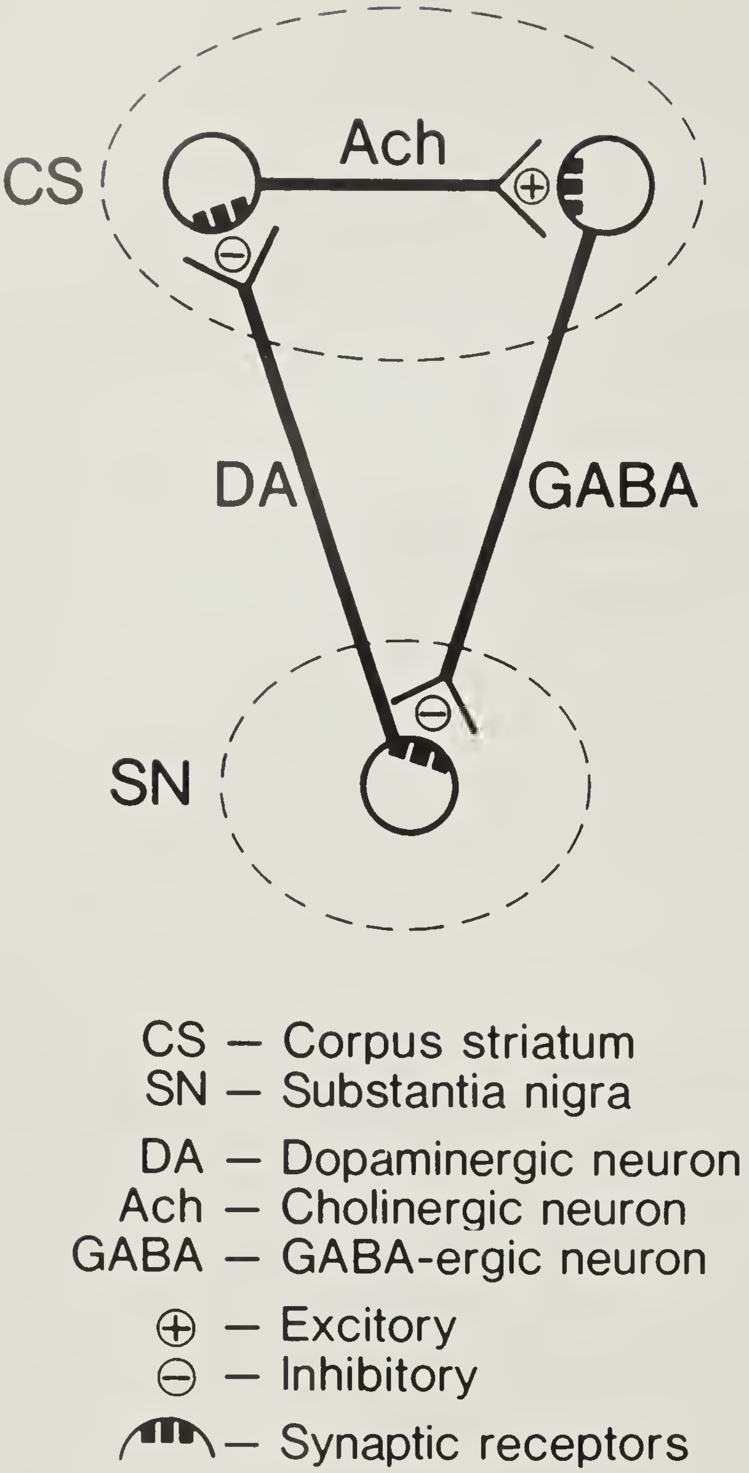
From: Dept. of Pharamcology (Drs. Wastek, and Yamamura) and Dept. of Neurology (Dr. Stern), U of A Health Sciences Center, Tucson, AZ. Reprint request to Dr. Henry I. Yamamura, Dept. of Pharmacology.



cholinergic input.

Unlike the striatal cholinergic system, synaptic GABA receptors in the substantia nigra are unaltered in HD. In fact, there is an increase in nigral GABA receptors. This indicates that "denervation supersensitivity" results from the loss of GABA neurons[14]. (see figure).

Since the striatal cholinergic and BAGAergic neurons are reduced in number in HD, the nigrostriatal dopamine neurons fire unopposed. Because of this excess dopaminergic input, HD has been called the "mirror-image" of Parkinson's disease.

The primary treatment for HD has been the neuroleptics (i.e., the phenothiazines and butyrophenones). They alleviate the motor symptoms by blocking striatal dopamine receptors and inhibiting dopaminergic input. Unfortunately, the neuroleptics don't alleviate the choreiform movements in all HD patients, and they are ineffective in treating th dementia[15].

In view of the deficits in GABA and Ach, attempt have been made to treat HD by increasing brain level of these neurotransmitters. Thus far, the attempt with cholinomimetics have been equivocal [2,16]. Th is probably due to the fact that although th remaining cholinergic receptors are functionally intac there are too few of them to be effective in restorin cholinergic function. However, since the number synaptic GABA receptors is unchanged, or slightl increased in HD, increasing brain GABA, administration of a centrally-active GABA-mimeti may be a more useful approach to therapy. Attempt to do this have been hampered because, at pr sent, no centrally-active GABA-minetics are avai able in sufficient quantities for a large clinical trai and investigators are unable to monitor brain GAB levels during treatment with GABA-mimetics or wit inhibitors of the enzyme that degrades GAB GABA-transaminase[15].

Recently, a radio-receptor assay has been develope to measure cerebrospinal fluid (CSF) GABA levels[17] Initial tests have revealed significant decreases in th CSF GABA levels of HD patients[18]. If these result are verified, the GABA CSF-assay could be useful i diagnosing these disease in at-risk individuals, an monitoring brain GABA levels in HD patients unde going GABA-mimetic therapy.

Because of these discoveries, it seems that we are o the threshold of developing new therapeutic agents f HD, thus making life more comfortable for the H patient while researchers explore the more difficult an challenging problems of the genetic defect itself.

## ACKNOWLEDGEMENT

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# Nutrition Before Pregnancy: Why We Should Be Concerned

N. Burton Attico, M.D., M.P.H.
Margaret E. Hendrikx, R.D.

**The nutritional status of the woman before and during pregnancy should be such that she can provide sufficient nutrients for optimal fetal growth and development during or subsequent to the pregnancy. Numerous studies confirm that severe maternal dietary deprivation of calories, protein or both can adversely affect pregnancy outcome. Increased perinatal mortality, marked reduction in fetal weight, decrease in the number of brain cells are but some of the unfavorable results of a pregnancy in the nutritionally deprived mother. Much has been accomplished in recent years toward improvement of nutrition during pregnancy. But what of such efforts before and between pregnancies (the interconceptual period)? Continued emphasis in this area should surely favorably affect pregnancy outcome.**

Donald J. Ziehm, M.D., Editor

Although the importance of nutrition during human pregnancy has been well recognized, nutritional status during the interconceptual period has received less attention. The interconceptual period includes the prereproductive, pre-conceptual, contraceptive and postnatal periods (all non-pregnant times for females prior to menopause). Animal husbandry has long recognized the value of nutrition in the interconceptual period in relation to the health of mother and young, but this concept has not carried over to human experience.

Improvement of interconceptual nutrition should reduce the numbers of mothers and infants at risk of morbidity due to less than optimal nutritional condition. Among the problems of evaluating and improving nutrition in this group is the lack of regular nutritional surveillance and treatment and the failure to consider the constant prospect of pregnancy in all women in the reproductive age. The majority of nutritional requirements evolved to define deficiency or disease states rather than to give an indication of optimal health. Until recently most criteria were described for males, then weight corrected and transposed to females without verification. This approach has proved to be incorrect.

Recent national surveys have cited major nutritional deficiencies in some segments of the population, iron deficiency being the most prevalent. Two-thirds of women in some studies had iron stores ranked as absent, trace, or one-plus. Added stresses are sustained by those recently pregnant, lactating or using contraception. Oral contraceptives are associated with folate deficiencies. Some women using IUDs may have excessive menses with resultant marked blood-loss anemia. Deficiencies in calcium, protein and Vitamin A have also been identified.

A prime target for nutritional improvement should be the teenager. Regardless of socio-economic status, her nutrition is the poorest of any group. The combination of poor nutritional stores and the added needs of maturation produces a pregnant adolescent who will have a poor perinatal outcome. Other groups in need of nutrition education include the under and overweight, those with poor nutritional states due to faulty or fad dieting, and those with medical problems.

Low socio-economic status expands the problem. The poor spend 60% of their incomes on food, while the middle class and rich allot less than half that proportion. The price of foods most often used by the poor has increased at a greater rate, e.g. rice increased 124% while sirloin steak rose 38.9% in a recent 4 year period.

A team approach for recruitment, referral and evaluation of the nutritional condition of interconceptual clients, together with a coordinated effort for improving the health and nutrition of this group is a necessity. Our goal is to reduce the high risk obstetrical pool, decrease perinatal morbidity and improve the outcome of subsequent pregnancies. Preventing or decreasing malnutrition in a greater proportion of the women at risk during pregnancy should also diminish the need for intensive nutritional or medical therapy during the prenatal period.

More efficient utilization of existing health care facilities and personnel in addition to better cooperative efforts among all members of the health team is essential. Hopefully such efforts will produce long term benefits, not only for the present generation of women and infants, but also with cumulative effects for future generations.

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Presented at the Annual Meeting, Arizona Dietetic Association. Reprint requests to Dr. Ziehm, 1728 W. Glendale Ave., Phoenix, AZ 85021.

*Ophthamology*

# Intraocular Lens Implants

Ronald W. Barnet, M.D.

Editor
Robert Rubenzik, M.D.

## INTRODUCTION

One of the most exciting and controversial developments in ophthalmology today is the use of intraocular lens implants for cataract surgery patients. Although intraocular lens implants (IOL) were introduced in 1949, they have achieved widespread use only in the last two years.

## HISTORY

Ridley implanted the first IOL in England in 1949. Although many of the Ridley implants were successful, a large number of them resulted in complications. A second generation of IOL were developed in the early 1950's and used mainly in Europe, but complications proved to be more frequent than with the Ridley IOL. Because of these failures, the very idea of IOL acquired a bad reputation.

## MODERN IOL

In the mid and late 1950's Binkhorst in Holland and Epstein in South Africa each developed an IOL that avoided the complications encountered by the previous lens designs. Their lenses have undergone some minor modifications but have been used in Europe for nineteen years and in the United States for twelve years. A third type of IOL designed by Choyce in England has been used for fourteen years.

## ADVANTAGES OF IOL

When the natural lens is removed from the eye in a cataract operation, the optical system of the eye is deficient, and the lens must be replaced to return t eye to proper focus. There are three methods of doi this.

The oldest method of lens replacement is to u cataract spectacles. These are much stronger a thicker than regular spectacles because they mu replace the natural lens removed from the eye. Th results in undesirable distortions. The major featur of these distortions are: magnification thirty perce larger than normal; reduction of peripheral vision; a "pin-cushion" deformity of the visual field. (The distortions are so severe, that cataract spectacles c be used with both eyes only. A cataract spectacle le for one eye, and a normal spectacle lens for the oth eye will result in diplopia.) Some patients seem adjust fairly well to cataract spectacles, but mo patients experience varying degrees of difficulty. patient who has had bilateral cataract surgery a uses cataract spectacles is rated as having twenty-fi percent permanent disability.

The second method of lens replacement is the use a contact lens. Because a contact lens is closer to th center of the eye and much thinner than a spectac lens, it does not cause undesirable distortions. It universally recognized that after cataract surger vision with contact lenses is far superior to vision wit cataract spectacles. However, not all patients ca manipulate or adapt to contact lenses. This especially true for the majority of patients who hav cataract surgery.

The third method of lens replacement is th intraocular lens implant (IOL). This restores th vision to as normal as it can be following catara surgery, because the replacement lens is almost in th identical location of the natural lens of the ey Patients who have had IOL surgery use regular ey glasses for their best vision, although many of the have good vision even without eyeglasses.

## INDICATIONS AND CONTRAINDICATIONS

There are relatively few absolute contraindication to the use of IOL. In general, almost all patients wh are candidates for cataract surgery can have an IOL and in some communities this is the accepted practic (At Boswell Hospital in Sun City most of the catarac surgeries as performed by all ophthalmologists on th staff, include insertion of an IOL.) Some ophthalmologists select an arbitrary age limit, below which the will not use IOL. This is based on the belief that IOL' are not yet "proven safe" for long-term use. Othe ophthalmologists, including the author, have evaluated the clinical results and laboratory evidence available and have reached the opposite conclusion. Th current type of IOL has been in use for 18 years, an hundreds of patients have had greater than ten year evaluation. The author knows of a patient who had th Ridley IOL implanted in each eye 24 years ago, and i still doing well.

From: 13200 N. 103rd Ave., Sun City, AZ 85351

## SECONDARY IOL

t is possible to implant an IOL into an eye that has l previous cataract surgery. Of course, this second ration is not without the risk of complications so t the procedure should not be undertaken lightly. e surgeon and patient must weigh the probable ard of improved quality of vision against the sible risk of making the vision worse. Some thalmologists are rigidly opposed to the concept of ondary IOL surgery. The author has performed r two hundred of these operations, and has found results most gratifying. These patients truly derstand and appreciate the advantages of an IOL cataract spectacles and contact lens. The results of s series of operations is scheduled for publication er this year.

## COMPLICATIONS OF IOL

Some complications of cataract surgery - e.g. corneal edema, retinal detachment - occur both with and without IOL. The over-all incidence of complications seems to be about the same regardless of the type of surgery. Complications specifically due to the IOL itself are very uncommon, about one-half percent of total operations in the author's series of over one-thousand operations.

## CONCLUSIONS

The insertion of intraocular lens implants is a procedure that has greatly benefited patients afflicted with cataracts. It seems likely that more ophthalmic surgeons will use this procedure for increasing numbers of their cataract patients.

## *Radiology*

# Case of the Month #24

Glenn C. Cook, M.D.
John C. Bjelland, M.D.

itor
M. Freundlich, M.D.

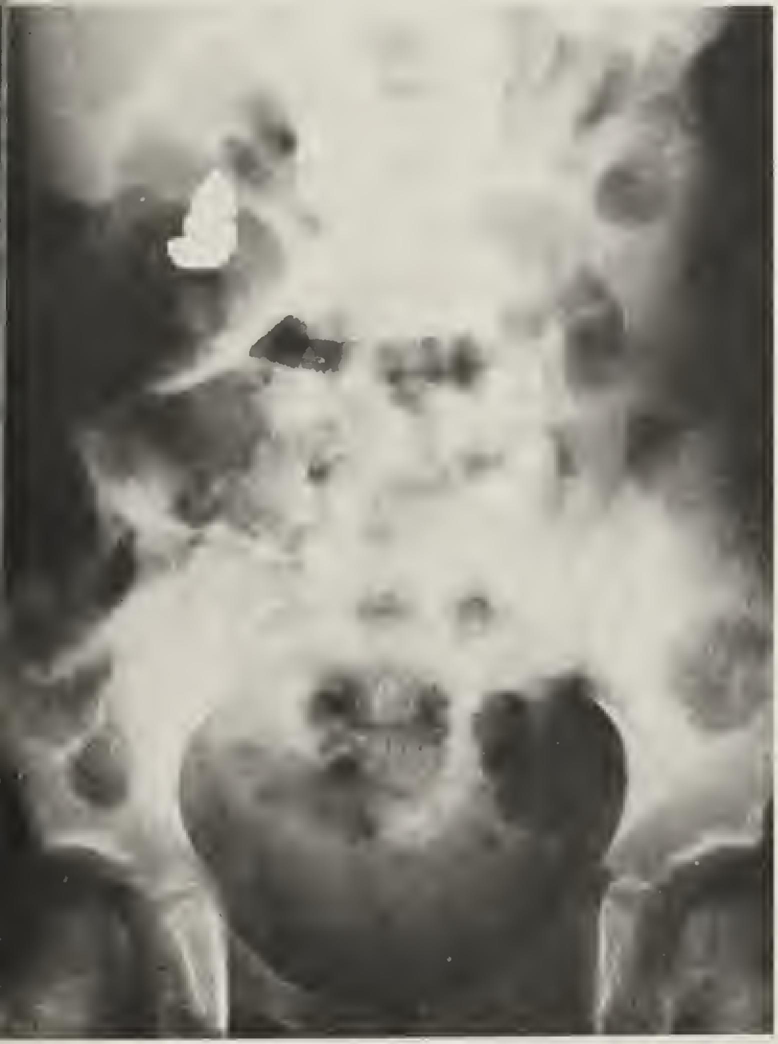

**Figure 1: Abdominal plain film on admission.**

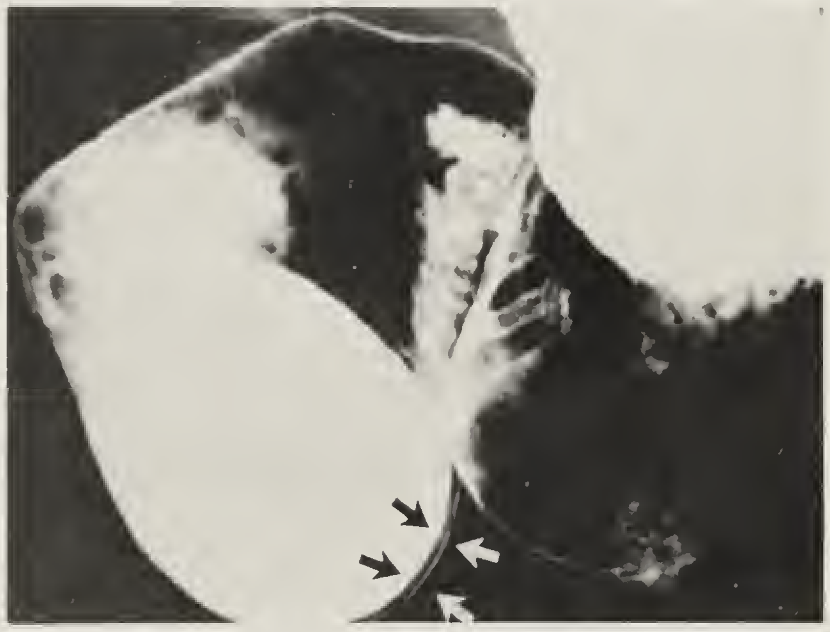

**Figure 2: Left posterior oblique coned-down spot film from UGI (note arrows).**

A 2½ year old female was admitted with a history of vomiting for several days.

An abdominal plain film revealed a radiopaque foreign body in the right upper quadrant (Figure 1). On serial follow-up films, the foreign body remained in the same position, and barium studies were performed (Figure 2).

What is the diagnosis?

From: Dept. of Radiology U of A Health Sciences Center, Tucson, AZ 85724.

# Congenital Duodenal Diaphragm Causing Incomplete Small Bowel Obstruction

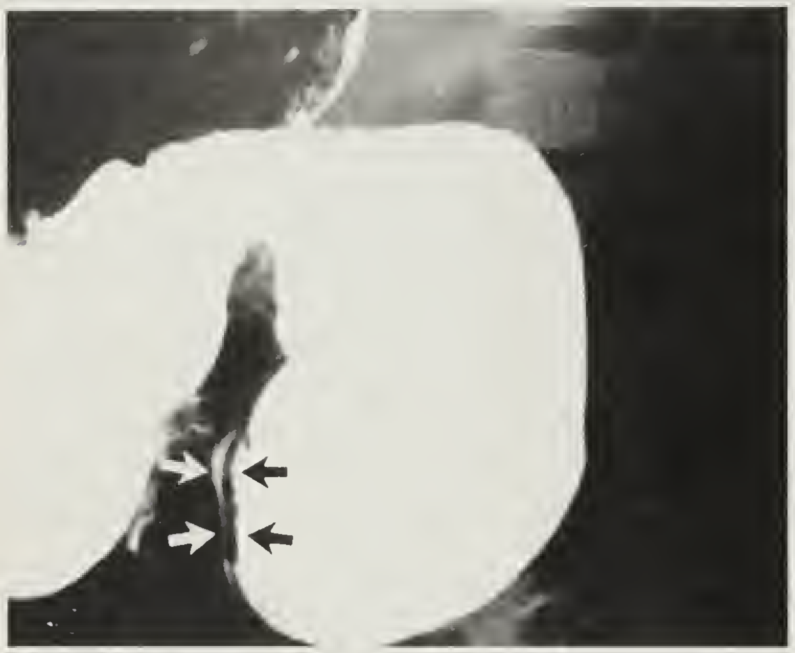

Figure 3: Right lateral coned-down spot view from UGI.

Radiographic findings in the first three films are suggestive of the diagnosis. Figure 1 demonstrates a radiopaque foreign body in the right upper quadrant. Because the foreign body did not progress through the gastrointestinal tract, a provisional diagnosis was made. Further work-up included barium studies which confirmed the presumptive diagnosis. The proximal portions of the duodenum are dilated indicating obstruction of the lumen (Figure 3). Because barium is visible distally, the obstruction is incomplete. In addition, the column of barium is interrupted by a lucent band-like filling defect (arrows). This is the radiographic hallmark of a duodenal diaphragm. Other causes of duodenal obstruction which must be considered are:

Duodenal atresia,
Duodenal stenosis,
Annular pancreas,
Ladd's bands,
Intussuscepted duplication,
Dilated common bile duct, and
Choledochal cyst.

Obstructing duodenal diaphragm is a congential anomaly thought to occur because of abnormal vacuolization of the gastrointestinal lumen around the 12th week of intrauterine life. It most frequently is located in the descending duodenum near the ampulla of Vater and may become stretched within the lumen to form the so-called "wind-sock" intraluminal duc denal diverticulum. Because of this characteristi location, the orifice of the distal common duct ma terminate within the diaphragm.

Although otherwise normal children may have thi entity, it is more frequently found in patients wit multiple congenital anomalies. The most frequen association is with trisomy 21 (i.e., Down's Syn drome). Other commonly associated lesions include similar webs (proximally or distally), duodenal atresia malrotation of the gut, aberrant bands (either Ladd' or adhesive), and annular pancreas.

Clinical presentation is varied. With a high grad obstruction, the patient will usually present early wit nonprojectile vomiting. Those with lesser degrees obstruction generally have vague abdominal symp toms with episodic vomiting and failure to thrive Establishing the diagnosis in these patients may b difficult; and, therefore, is often undetected unti adulthood. Those with deferred diagnoses may develo complications secondary to associated gastric o biliary stasis. Peptic ulcers and acute pancreatiti have been reported.

The preferred treatment is surgical and consists o duodenotomy with excision of the diaphragm. T prevent the post-operative complication of recurren obstruction, the stomach and distal duodenum mus be explored to rule out the presence of additiona duodenal diaphragms.

## SUMMARY

To summarize, a duodenal diaphragm is a congeni tal lesion frequently associated with other congenita anomalies. The early diagnosis may be difficult especially in patients with minimal obstruction Diagnosis is facilitated when the characteristic roent gen features are demonstrated. To be certain tha surgical removal is curative, other potential obstruc tive lesions of the gastrointestinal tract must b excluded at laparotomy.

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Rheumatology

# rthroscopy of the Knee

lfred F. Miller, M.D.

Precise diagnosis of intra-articular pathology in the ee can be very difficult using only standard clinical d radiographic examinations. Consequently, new agnostic tools have been sought, and in recent years uble-contrast arthrography and arthroscopy have come increasingly popular.

Arthroscopy has been shown to greatly increase agnostic accuracy, by providing unique information ith few serious complications. A prime consideration r the orthopedic surgeon is not only the diagnosis of knee condition, but whether the problem is amenable surgical treatment. Arthroscopy can frequently be ry helpful in making this decision. A description of is procedure forms the basis of this report.

## DEVELOPMENT OF THE ARTHROSCOPE

Articular cavities have been one of the last areas f the body to surrender to the probing eye of the ndoscopist. The first successful arthroscope was esigned and used by Takagi in Japan in 1920. onsiderable interest in the procedure continued in apan, but only sporadic reports appeared in the merican or European literature. Slow progress was ue, in part, to the difficulty in designing a atisfactory optical system. About 1959, another Japanese orthopedic surgeon, Dr. Masaki Watanabe, developed his arthroscope No. 21. This instrument had excellent optics and was small enough for ordinary clinical use. In the 1960's. Dr. Robert Jackson of Toronto was responsible for introducing the procedure to North America, and has remained extremely active in studying its use and application to clinical orthopedics.

Arthroscopic examination of the knee has gained increasingly widespread acceptance among orthopedic surgeons in this country during the past few years [1,2,5,6]. Instrumentation has been constantly improved, and fiberoptic equipment is now available that is quite reliable and relatively free of mechanical problems. A variety of arthroscopes are on the market. The author, who began using the arthroscope in 1970, currently prefers the 4.0mm. scope made by the Karl Storz Company.

## INDICATION FOR AND VALUE OF ARTHROSCOPY

Initially, arthroscopic examination was reserved for "problem knees." However, as experience was gained, it became apparent that useful information could be obtained in the more "routine knee." The procedure is particularly helpful in certain situations including:

1. Diagnosis of meniscal pathology.

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From: 500 E. Thomas Rd., Phoenix, AZ 85012.

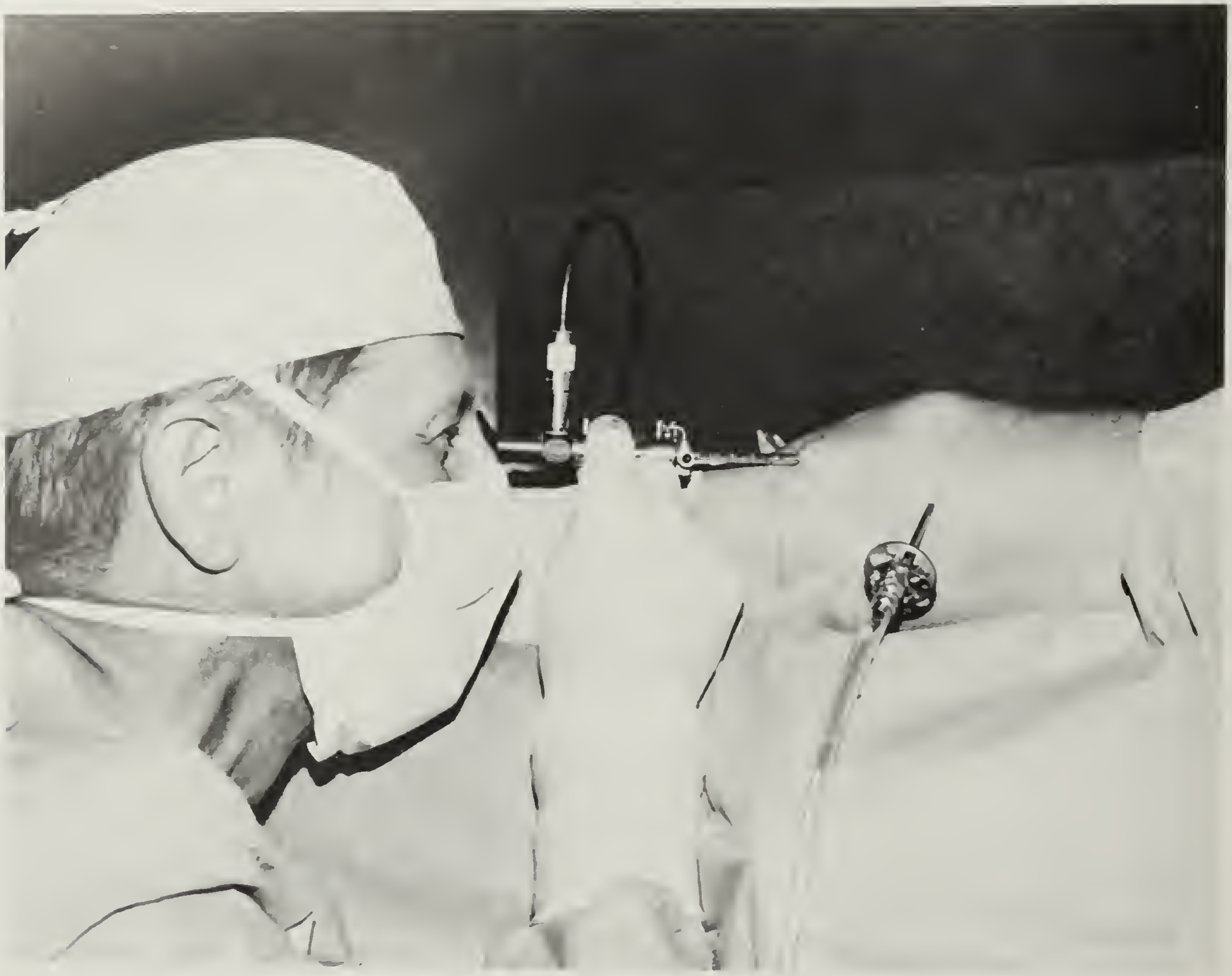

FIGURE I
Arthroscope in place in the left knee.

2. Intra-articular ligamentous injuries.
3. Medico-legal or compensation cases.
4. Evaluation of knee problems in teenage or young adult female patients in whom a diagnosis has always been unusually difficult.
5. Diagnosis of problems following knee surgery.

When the arthroscope is used, a diagnostic accuracy of 90-98 percent has been reported in large, carefully studied series [3,5]. A particularly significant study was that of Dandy and Jackson[2] involving 800 consecutive arthroscopic examinations. In 51 percent of these cases, the plan of management was significantly altered as a result of the arthroscopic findings. These changes in treatment included avoidance of operation, a different operation being performed than originally planned, and discovery of surgically treatable conditions in knees that otherwise would have been treated nonoperatively. Similar findings are reported by DeHaven and Collins [5]. The author's experience has been with approximately 200 arthroscopic examinations carried out since 1970. The clinical impression is in agreement with those conclusions reached by Dandy and Jackson and DeHaven and Collins regarding the value of the procedure. A more complete visualization of the knee joint can be obtained by means of the arthroscope than through the usual arthrotomy incision. Arthroscopy should no preclude the intelligent use of other diagnosti information. Virtually all knees being considered fo surgical treatment for socalled "internal derangement' should be considered for arthroscopy. The procedur requires time and patience to learn, and accurac comes only with experience.

In the past, the menisci were viewed by many a functionally unimportant structures, and that th removal of normal or minimally abnormal menisci di no harm to the knee joint. "Hypermobile meniscus" o "small perhipheral posterior horn tear" where term used to justify surgical treatment in some cases[1]. Evidence is accumulating that these structures d play an important part in knee joint function Meniscectomy is not an innocuous procedure an efforts should be made to save the meniscus unles significant pathology is present that would warrant it removal. Arthroscopy has distinct advantages ove other diagnostic techniques in determining the degre of abnormality in the menisci, and whether surgery fo removal is indicated. In this way, a significant numbe of ill-advised operations can be avoided.

## TECHNIQUE OF ARTHROSCOPY

The examination can be carried out in an outpatien surgical facility and under general anesthesia. Th

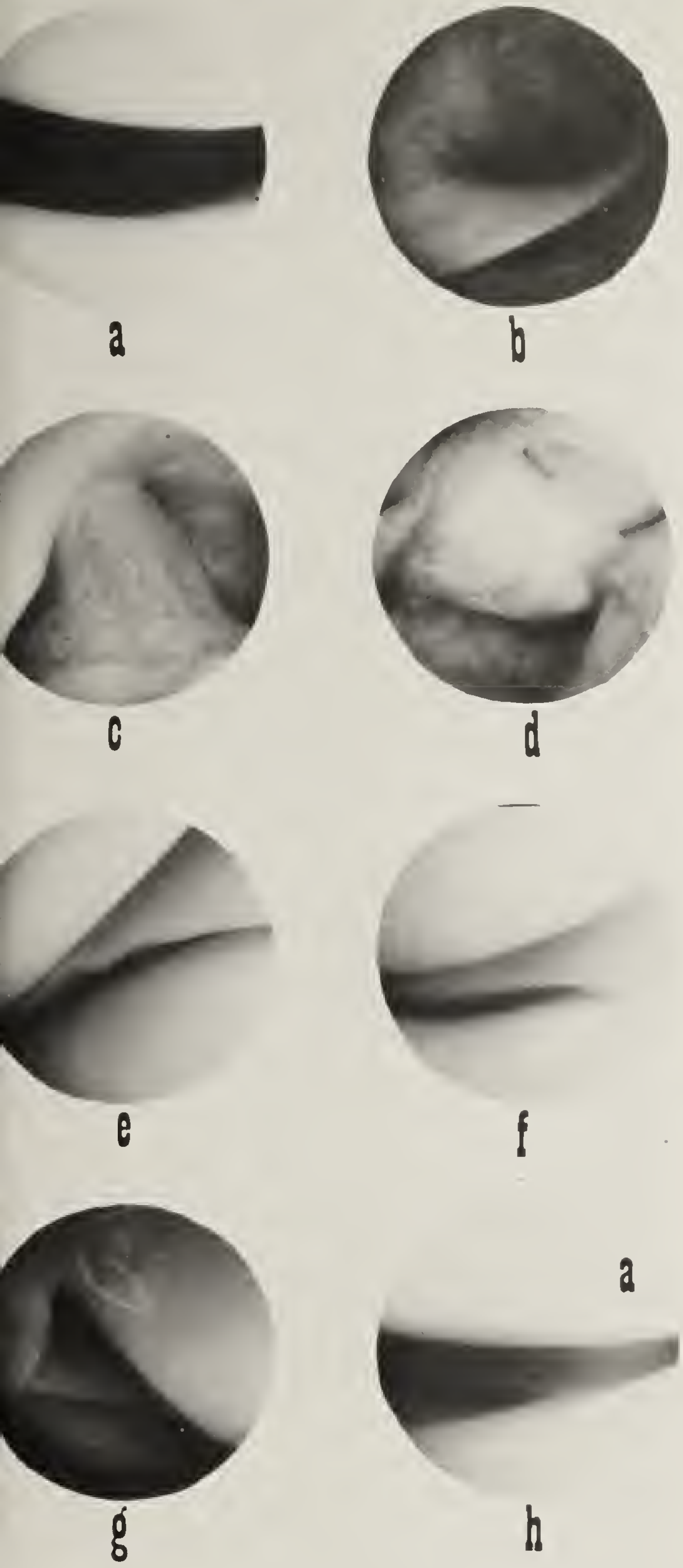

FIGURE II
Normal arthroscopic findings

a. Patella (above) and femur (below).
b. Suprapatellar synovial plica.
c. Anterior cruciate ligament.
d. Posterior cruciate ligament.
e. Medial meniscus - middle third.
f. Medial meniscus - posterior third.
g. Medial meniscus - posterior horn.
h. Lateral meniscus.

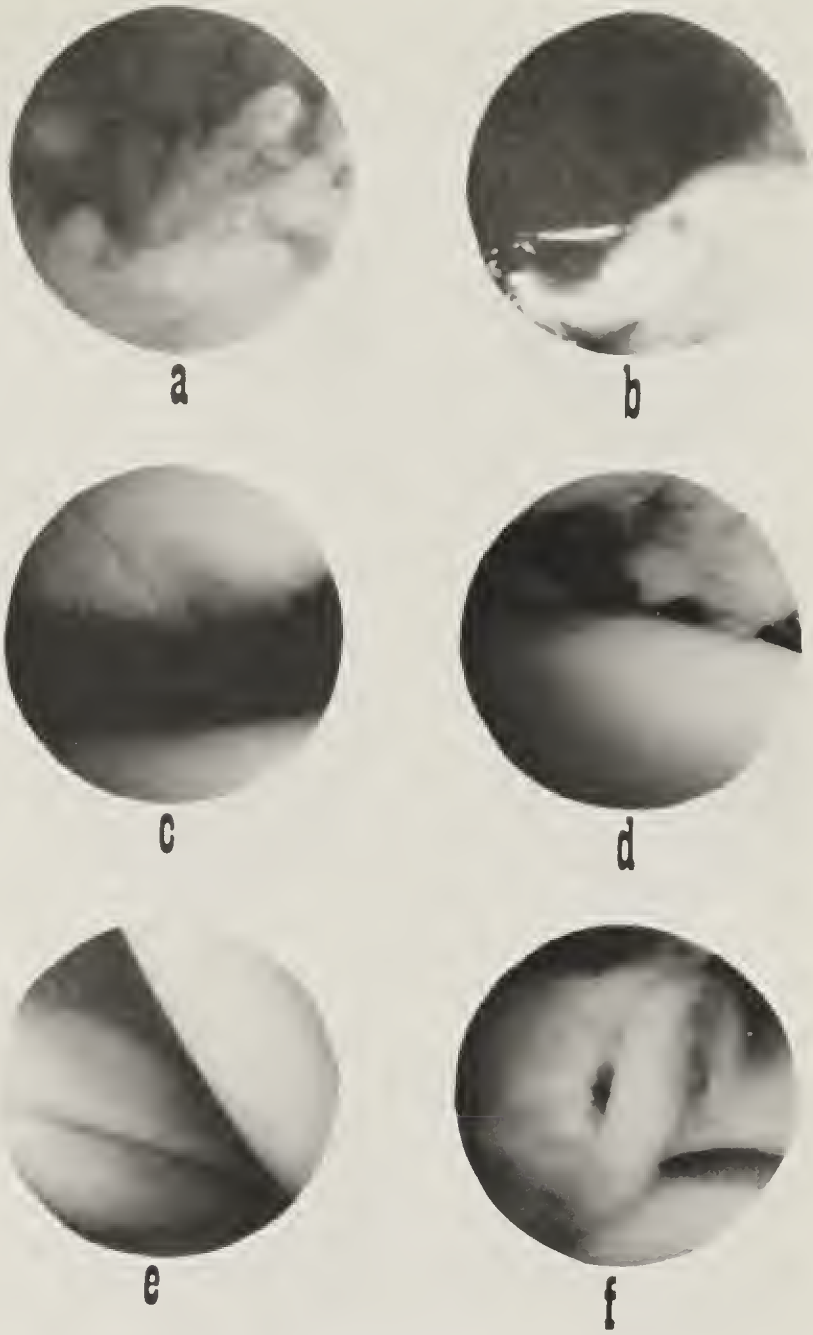

FIGURE III
Abnormal arthroscopic findings.
a. Synovitis in osteoarthritis.
b. Synovial biopsy forceps in place.
c. Patellar chondromalacia - mild.
d. Patellar chondromalacia - severe.
e. Clevage tear - medial meniscus.
f. Flap or "parrot beak" tear - medial meniscus.

knee is prepped and draped in a sterile manner. No tourniquet is used. The fiberoptic telescope and light cord are cold sterilized in Cidex solution. The other equipment is steam autoclaved.

A large needle is inserted in the suprapatellar pouch and the knee joint is distended with 50-75 cc. of saline. The arthroscope is introduced through a small stab incision just lateral to the patellar tendon at the joint level. Occasionally the antero-medical approach is also utilized. A continuous flow of saline is maintained through the instrument and out the needle in the suprapatellar pouch. Sufficient hydrostatic pressure is supplied by elevating the saline supply three or four feet above the level of the knee.

The knee joint is examined systematically. The suprapatellar pouch is the best area to observe

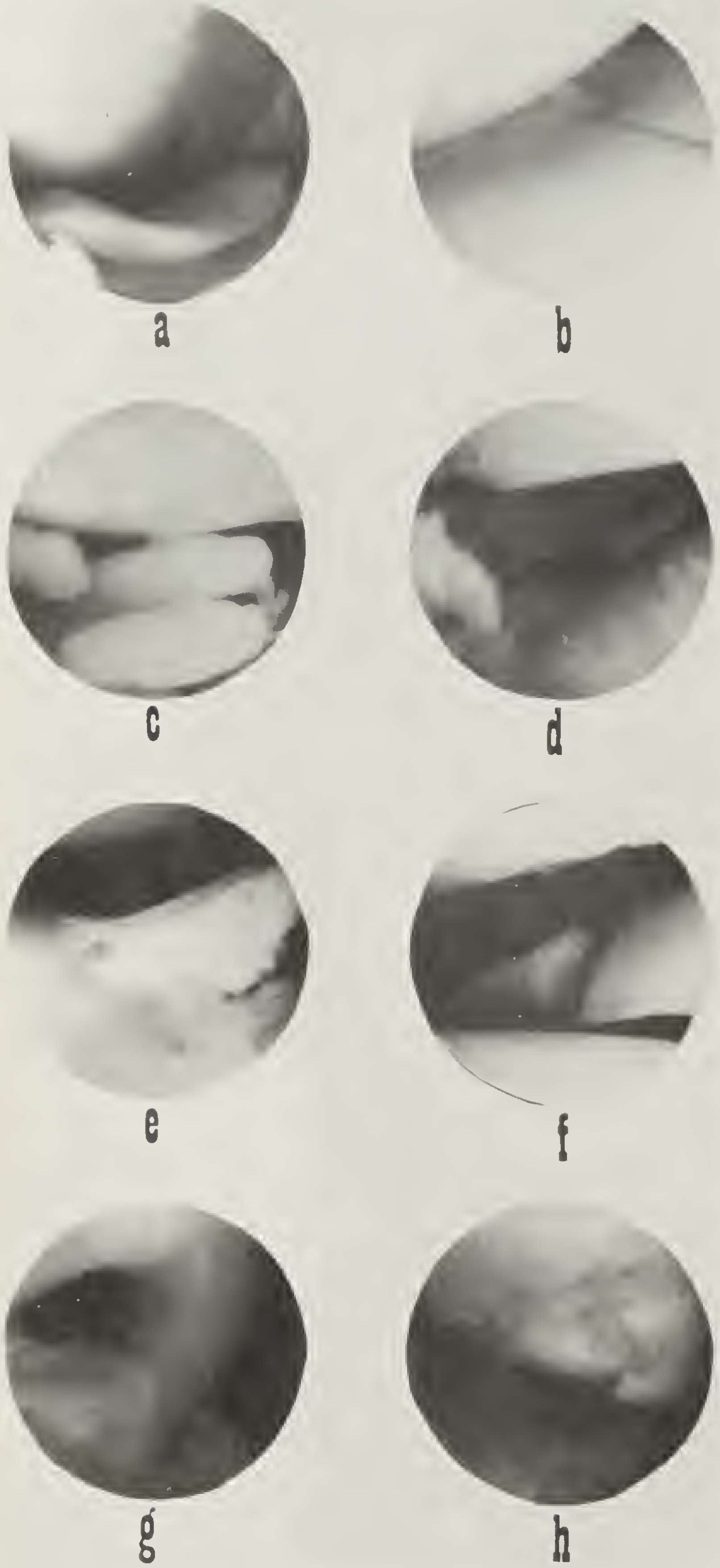

FIGURE IV
**Abnormal arthroscopic findings.**
a. "Bucket handle" tear - medial meniscus.
b. Posterior horn tear - medial meniscus.
c. Osteocartilaginous loose bodies.
d. Retained meniscal fragment - postoperative.
e. Torn lateral meniscus.
f. Vertical tear - lateral meniscus.
g. Defect in medial femoral condyle - osteochondritis dissecans.
h. Osteoarthritis - medial femoral condyle.

changes in the synovium, and is examined first. This is followed, in order, by examination of the articular surface of the patella, the intercondylar notch area including the cruciate ligaments, the medical compartment, and the lateral compartment of the knee Particular attention is given to the appearance of the medial and lateral menisci. Usually, the entire medial meniscus can be seen, but in some "tight" knees, it is not possible to see the entire posteromedial portion of the structure. A permanent record can be secured by taking photographs with a single lens reflex camera attached to the eyepiece of the arthroscope. Synovial biopsies are obtained through the instrument when indicated.

The stab wound is closed with a single stitch, and a light dressing is applied. The patient is allowed to walk and return home when recovered from the anesthetic. Pre-examination activities can be resumed in a couple of days. If surgery is indicated, it is scheduled in the hospital. At least a week is allowed for healing of the stab wound.

## ARTHROSCOPY VS. ARTHROGRAPHY

Both arthroscopy and arthrography are importan tools in the diagnosis of knee problems. It is difficul to precisely compare the accuracy of diagnosis of the two techniques but, in general, it appears tha arthroscopy holds a decided edge [4, 5]. In addition arthroscopy permits the obtaining of synovium and other material for histological examination. Also, with the arthroscope, information can be obtained unde both static and dynamic conditions. In some cases the techniques complement each other and both ar indicated. With either procedure, considerable experience is required by the orthopedic surgeon o radiologist in carrying out the examination and interpreting the findings.

Arthroscopy is more time consuming for th orthopedic surgeon, and does require that he personally make the diagnosis rather than relegate thi responsibility to the radiologist or others.

## CONCLUSION

Arthroscopy is a practical and reliable aid in th diagnosis of knee problems. As a result, more effectiv treatment can be based on the pathology known to b present in the knee. Physicians dealing with problem of the knee joint should be aware of the valuabl information obtainable from an arthroscopic examination.

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## Surgery

# he Free Flap - Practical Applications f Microvascular Surgery

oshua J. Tofield, M.D.
oyd R. Burkhardt, M.D., F.A.C.S.
aul L. Schnur, M.D., F.A.C.S.

**This issue of Arizona Medicine presents the first in series of articles on Plastic and Reconstructive urgery. Due to the proliferation of new knowledge nd techniques in the specialty, clinically oriented eviews will be written to enable physicians in other elds of medicine to keep abreast of new developments plastic surgery as they relate to their own practices. y utilizing the talents of various practicing plastic urgeons as guest contributors, different points-of-iew will be presented, and areas of controversy will e explored, allowing the reader to formulate his own pinions on different subjects. It is hoped that these eviews will also be valuable in providing material for ontinuing education studies. Comments and discus-ion from the readers is welcome and encouraged.**

ack A. Friedland, M.D., Editor

For many years surgeons have dreamed of trans-erring a flap of skin and subcutaneous tissue from one art of the body to another by completely detaching it rom the donor site and anastomosing the blood essels supporting the free flap to blood vessels in the ecipient site.

At a stroke this free flap technique would eliminate he long, painful, and dangerous periods of immobili-ation and multiple procedures involved in cross leg aps or distant pedicle transfers. (Fig. 1) Patients ndergoing cross leg flaps must be immobilized in plaster for two to three weeks until the flap of tissue gains enough blood supply from its recipient area to survive being cut free from the donor area. Furthermore, cross leg flaps cannot be done in the elderly because of the risk of permanent damage to their joints from the period of immobilization. Neither are they possible in patients with epilepsy. Fractures of the donor leg or pelvis, adjacent damaged joints, or a variety of other conditions that make prolonged immobilization difficult or impossible. As a result, amputations are sometimes necessary because of inability to provide tissue coverage for the leg after trauma.

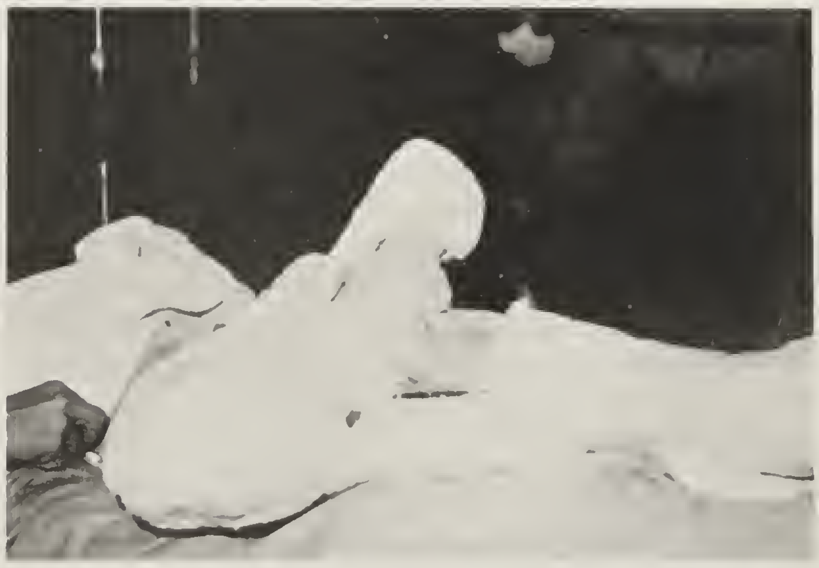

**Fig. 1 Cross Leg Flap - Three Weeks Immobilized in Plaster.**

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The reality of a fee flap transfer, although simple in design, awaited the development of two fundamental advances.

The first was an understanding of the blood supply to the skin. The skin of the human is vascularized in two different ways[1,2]. The majority of the skin receives its vascular supply by vessels penetrating perpendicularly from the underlying muscle; this has been termed musculo-cutaneous supply. Certain areas of the body, however, receive their blood supply by vessels running directly to the skin; this is termed direct cutaneous supply. Examples are: The dorsum of the foot (dorsalis pedis artery), the ilio-femoral area (superficial circumflex iliac artery and superficial inferior epigastric artery), the forehead (superficial temporal and supraotbital arteries), the upper anterior chest (perforators from the internal mammary artery), and the fingers and toes (digital arteries).

The crux of the concept of free flaps is that an entire flap can survive on its isolated single artery and vein, often no larger than one millimeter in diameter[4].

Interestingly, free flaps can be raised on either a direct cutaneous supply or a musculo-cutaneous supply. The former has proven to be the more common and useful for free flap transfer[10,5]. The iliofemoral area provides an area of tissue up to 15 cm. x 25 cm. supported by an artery that is reliably greater than 1 mm. in diameter and one or more draining veins. (Fig. 2, 3) This donor site can be closed directly leaving only a linear scar. (Fig. 4)

A musculo-cutaneous free flap can be utilized by raising a portion of skin together with its underlying muscle and anastomosing the nutrient vessels of the muscle. An example of this is the gracilis muscle and the skin of the medial thigh.

The second advance was the development of the technique necessary to anastomose one millimeter blood vessels using the surgical microscope at powers of 16 to 25 and sutures of 10-0 Nylon[3]. It is necessary to perform these anastomoses without damage to the intima of the vessels in order to minimize the risk of clotting at the juncture. More than ten years of laboratory effort was conducted before culminating in the successful clinical transfer of a free flap in 1973[6,8]. Taylor and Daniel, in Melbourne, Australia, transferred a flap from the iliofemoral region to cover a severely comminuted fracture of the tibia with loss of pretibial skin.

Since then free flaps have been transferred to all parts of the body but with most dramatic results to the lower extremity. Flaps have been designed that incorporate nerve, bone and muscle in one-stage transfers; nerve to innervate numb hands[9,12], bone to span perviously ungraftable defects[7], and muscle to motor immobile hands[11]. Not only have patients been spared the immobilization necessary for distant pedicle flaps, but extremeties have been saved by covering heretofore impossible defects, and this with a saving of hospitalization time and money.

With this brief background, we present two of our

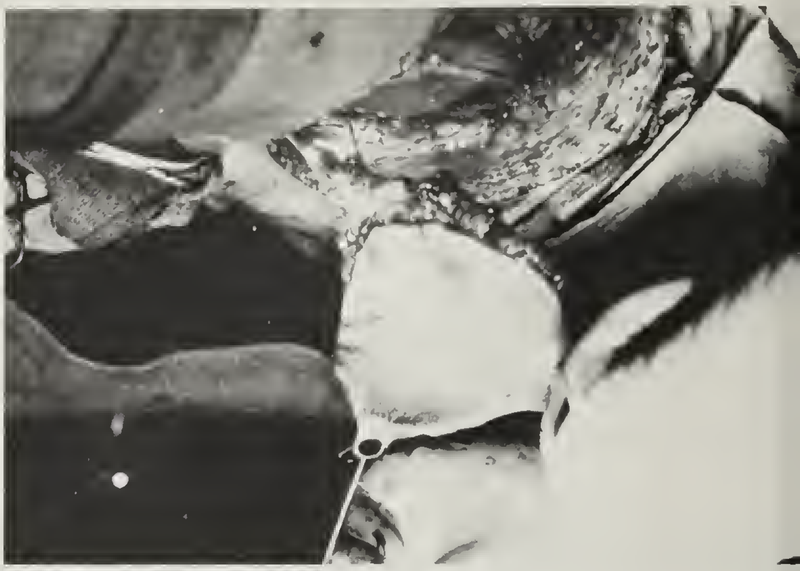

Fig. 2 Iliofemoral Flap Raised as an Island. (Case II)

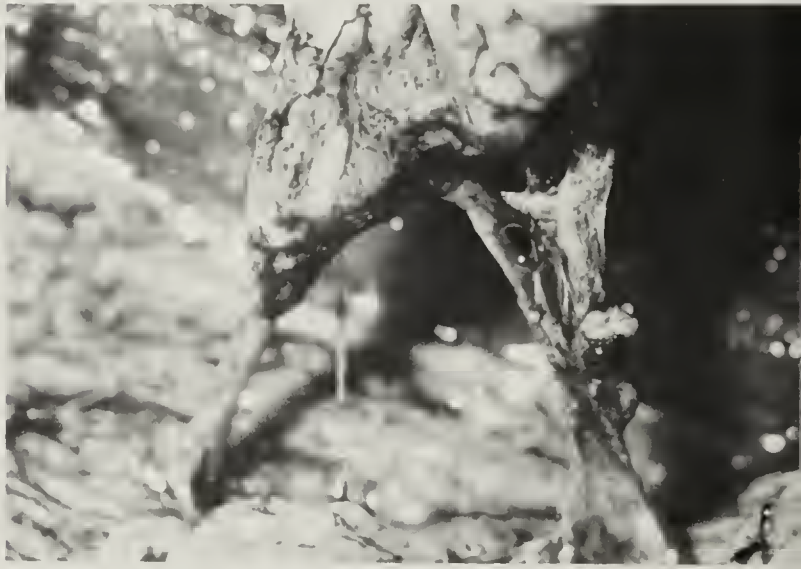

Fig. 3 Close-up of Supporting Blood Vessels. (Case I)

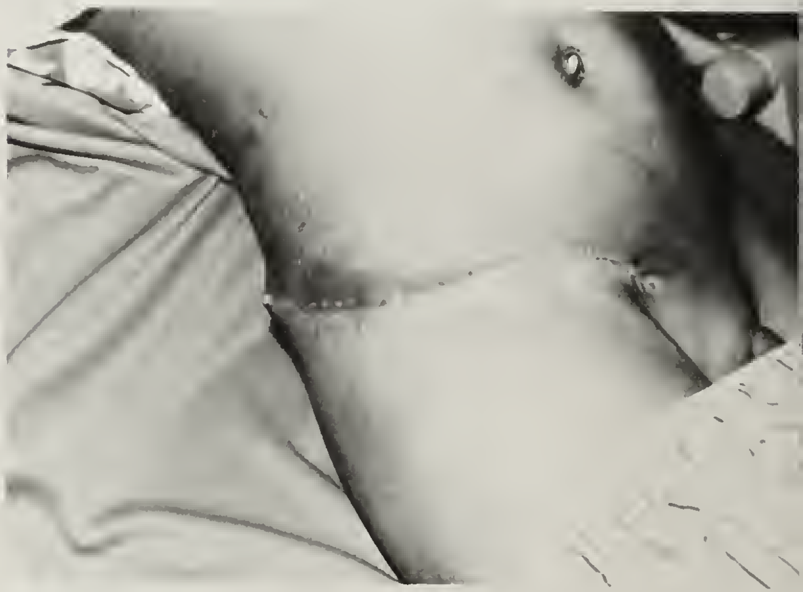

Fig. 4 Direct Closure of Donor Area. (Case II)

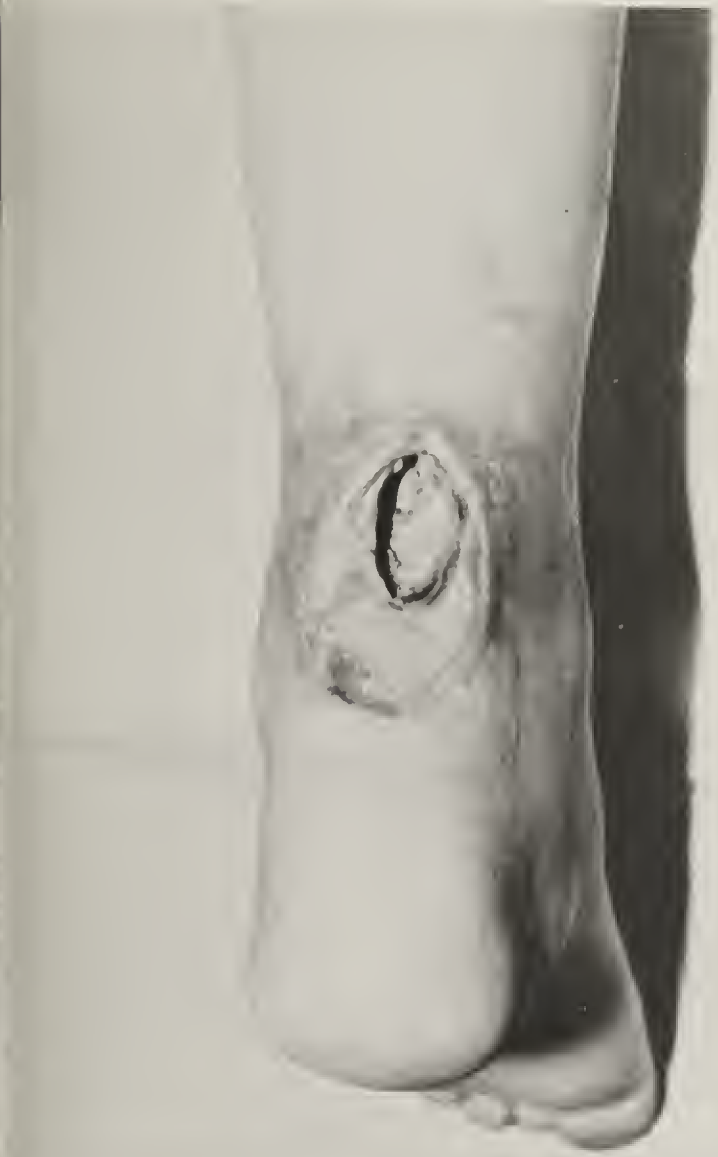

Fig. 5 Penetrating, Undermining Ulcer.

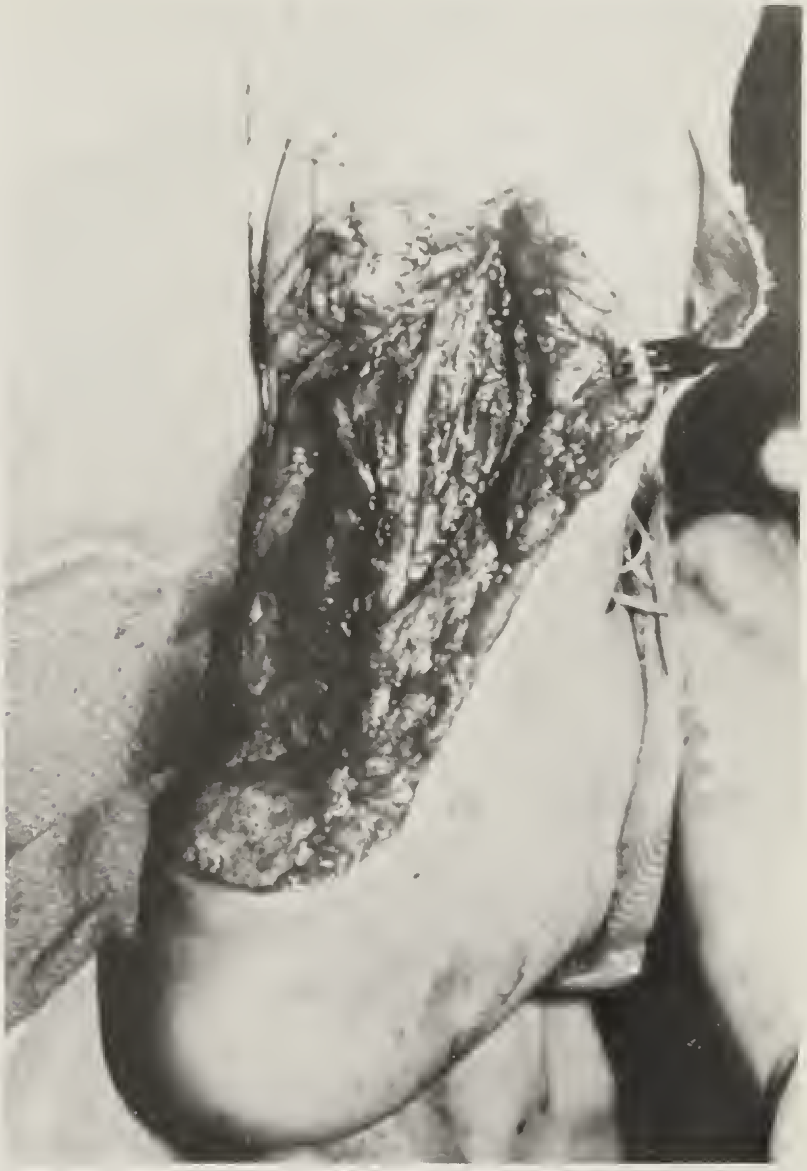

Fig. 6 All Necrotic Tissue Removed.

most recent free flaps in the lower extremity to illustrate the practical applications of this type of surgery.

Case One: **Free Flap for Reconstruction of the Achilles Tendon Area in a Patient with Self-mutilation Disorder, Epilepsy and Ipsilateral Knee Joint Damage.**

A 21 year old student nurse lacerated the achilles tendon of her left leg in an automobile accident. A puzzling course followed in which the wound broke down several times in one and a half years culminating in a large undermining ulcer that totally destroyed the left achilles tendon and surrounded the posterior tibial nerve producing patchy anesthesia of the sole. (Fig. 5) During this time a wound of uncertain origin developed, that widely penetrated the left knee joint, requiring many operations before closure with a skin graft was achieved. In addition, the patient had several recent grand mal seizures, was habituated to Pentazocine, and was taking steroids for bronchial asthma. Severe burning causalgia of the sole of the foot developed. She was transferred to our care. It was evident that she was in imminent danger of total destruction of the sensory innervation to the sole of the foot, and that coverage of the wound was essential. However, cross-leg flap was impossible because of her epilepsy and damaged knee joint. Arteriograms of the leg were obtained.

The ulcerated area was resected en block freeing the posterior tibial artery, veins, and nerve. (Fig. 6) A flap of the ipsilateral iliofemoral region was elevated. A 1.2 mm. artery in the flap, the sole arterial supply, was anastomosed to the posterior tibial artery. A 2 mm. vein from the flap was anastomosed to the greater saphenous vein.

Post-operatively the patient was given Dextran-40 intravenously daily for three days. Aspirin was administered for two weeks. The flap did very well. Complete survival of the flap was achieved. (Fig. 7,8) Normal sensation was regained in the sole. One week post-operatively the patient began meddling with the groin wound closure. This wound did not heal until dressings were sutured in place to exclude the wound from the patient's access. Among other bizarre behavior in the post-operative period, the patient bit a thermometer in half and swallowed it. One year post-operatively the flap and groin areas remained healed.

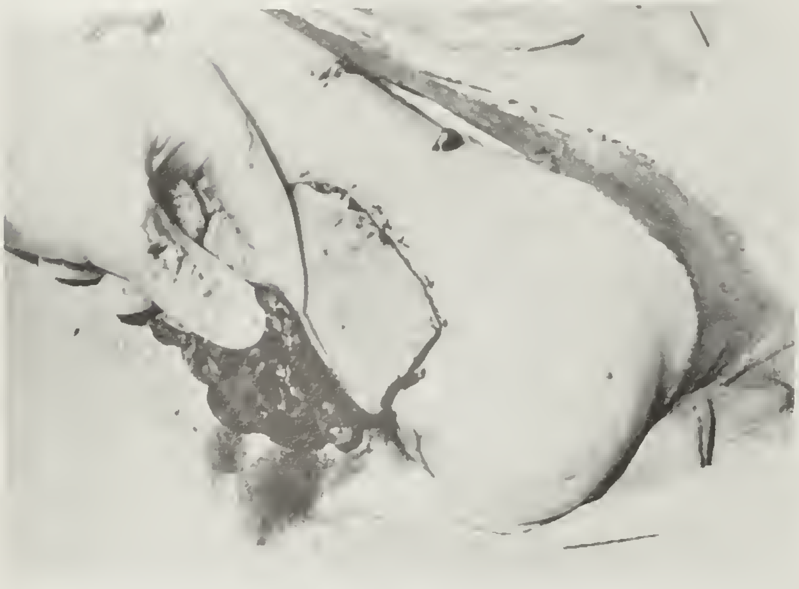

Fig. 7 Excellent Bleeding from Flap Edges.

**Case Two: Free Flap for Reconstruction of the Dorsum of the foot in a Seven Year Old.**

A seven year old Mexican boy suffered a severe crush wound of the dorsum of the left foot when a truck ran over him. He sustained a major avulsion of the skin of the dorsum and exposure of the tarsal joints, avulsion of the tibialis anterior and all toe extensors. The foot was preserved by covering the wound with split-thickness grafts. He developed a fixed extension contracture with 90 degrees dorsiflexion of the metatarsal joints of all of the toes. He was unable to wear normal shoes. One year after his original injury he returned from Mexico for reconstruction. (Fig. 7) It was obvious that with the contractures released, a very large flap would be required to cover exposed joints, remaining extensor tendons, and the entire dorsum of the foot. Furthermore, soft tissue coverage was necessary to provide for later tendon transfers or grafts to replace the dorsiflexors of the foot.

An iliofemoral regional flap, 10 cm. x 18 cm., was raised from the right groin. (Fig. 2) This was supplied by a single 1.1 mm. artery. It was drained by a 1.0 mm. vein and a 1.2 mm. vein. The old skin graft was removed from the tarsal bones and remaining extensor tendons. The capsular contractions of the metatarsal joints were released and the toes were fixed in slight flexion with K-wires. The microvascular flap transfer was then performed. The flap artery was joined to the dorsalis pedis artery. The flap veins were joined to small draining veins of the lateral portion of the skin of the foot. The donor site was closed primarily. (Fig. 4)

The flap did very well and survived completely. (Fig. 10, 11) The patency of the arterial anastomosis was monitored throughout the post-operative period with the Doppler flow probe. The stage is now set for later tendon grafts and transfers. The patient was spared the lengthy immobilization necessary for the distant pedicle transfers used in the past.

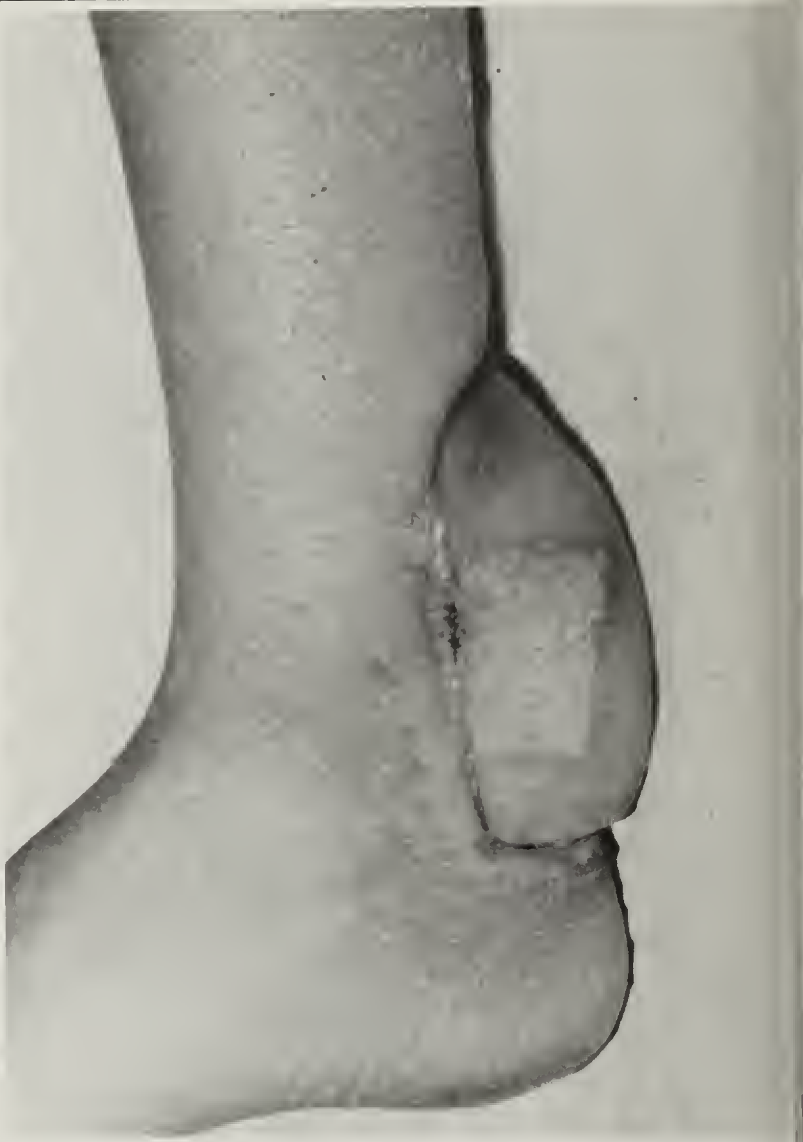

Fig. 8 40 Days Post-operatively. Note the light colored patch the flap. This is an old skin graft donor site in the gro transferred with the flap.

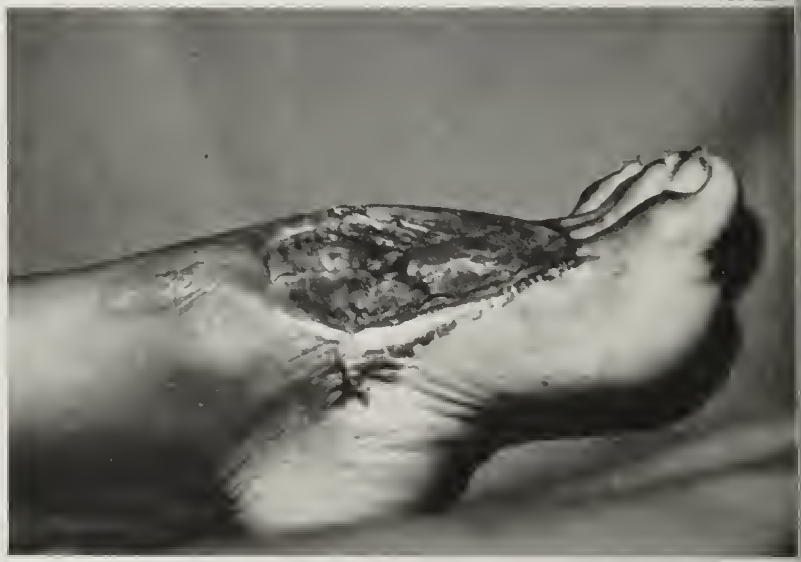

Fig. 9 Pre-operative.

## COMMENT

The microvascular free flap transfer has opened th door to the reconstruction of many difficult problem previously not amenable to therapy.

Replantation using microvascular technique ha been well publicized and will not be elaborated upo other than to note that fingers, hands, legs, a penis and scalps have been successfully reattached.

The exploration of the limits of this technique ha just begun.

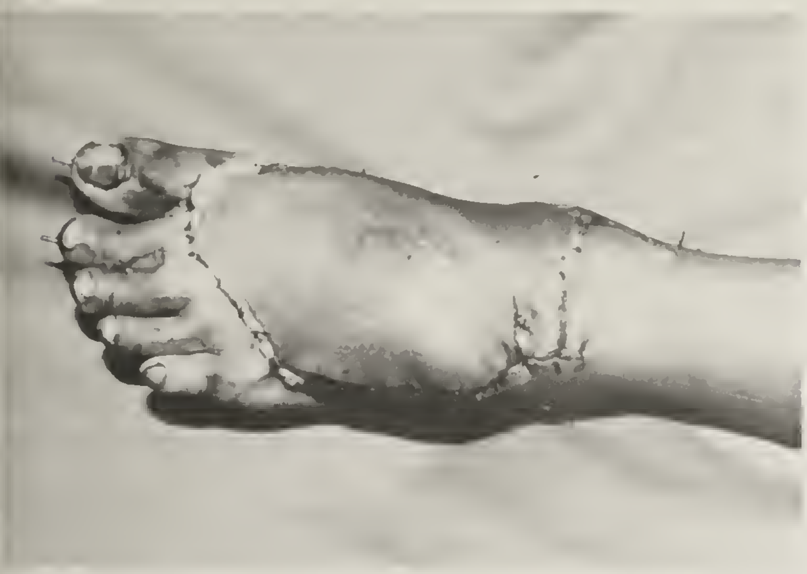

Fig. 10 One Week Post-operatively, Complete Survival.

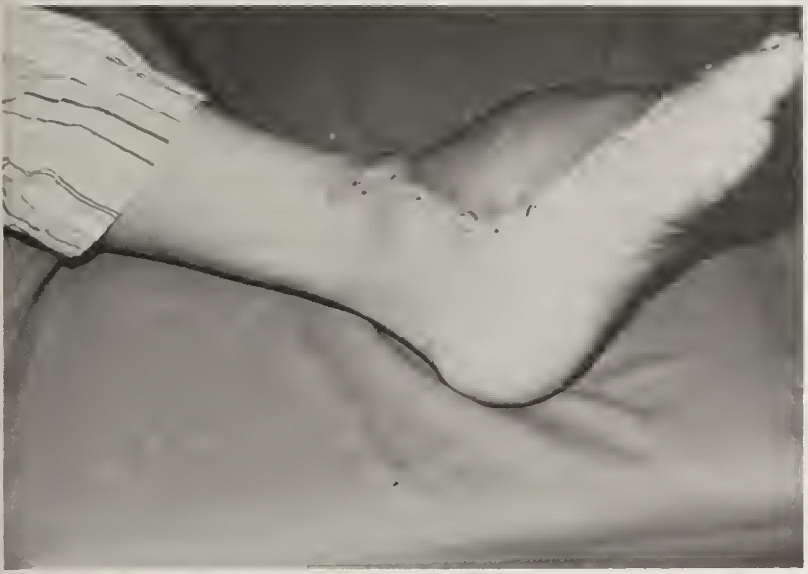

Fig. 11 Three Weeks Post-operatively.

## SUMMARY

Two cases of microvascular free flap transfers to the lower extremity are presented. A brief review of the principles and rationale underlying the technique is given. The advantages of free flaps over current techniques of flap transfer are noted.

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*Special Article*

# Health Care and Medical Education in the People's Republic of China

Herbert K. Abrams, M.D., M.P.H.
Sigmund Hsiao, Ph.D.
Douglas G. Stuart, Ph.D.

**Explanatory Note:**

The following is based upon a visit to the People's Republic of China with the University of Arizona Delegation between June 16 and July 2, 1976. Information was gleaned from visits to the Chinese Medical Association, hospitals, clinics, factories, communes, universities, and the Institute of Psychology, Chinese Academy of Sciences; conversations with personal acquaintances in China; and from readings of the Chinese literature.

By 1949 China had become one of the most destitute nations on earth — a land of periodic famine, floods and epidemics. Tuberculosis, the bellwether disease of poverty, was rampant. There was widespread opium addiction and prostitution. Feudalism on the land, foreign imperialism and invasion, domestic corruption and tyranny combined to maintain these conditions. In 1949, after a long period of invasion and occupation by the Japanese and many years of intermittent civil war, the forces led by the Communist Party came to power.

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From: Dept. of Family & Community Medicine (Dr. Abrams), Dept. of Psychology (Dr. Hsiao), Dept. of Physiology (Dr. Stuart) U of A. Reprint requests to Dr. Abrams, U of A Health Science Center, Dept. of Family & Community Medicine, Tucson, AZ 85724.

Soon after the "liberation", as the Chinese designate the revolution of 1949, Mao Tse-tung summarized Party policy in the health sector as: "(1) Serve the wokers, peasants and soldiers; (2) Put prevention first; (3) Unite traditional and western medicine, and (4) Combine health service with the mass movement."

The "Cultural Revolution" began in 1966 and the ferment it created was in evidence during our visit. Its health objectives are capsulized in Mao's words, "In health and medical work put the stress on the rural areas."

### Basic Health Problems

The Chinese characterize their present society as a "developing country." Their first strong efforts in health were preventive measures: sanitation to eliminate the filth-borne plagues; insect and other forms of pest control to eradicate disease vectors; immunization; improved nutrition, clothing and housing; development of agriculture and industry so as to provide better living standards; health education and maximum involvement of the people; and a vigorous family planning program to control further proliferation of what is today the world's largest population (one out of five human beings are Chinese). Simultaneously a nationwide medical care system was initiated.

Today the Chinese claim their people are adequately fed. Most of the preventable epidemic diseases have been eradicated or controlled, including cholera, plague and smallpox. Schistosomiasis and malaria have been greatly reduced and the end seems to be in sight. Venereal diseases have been eradicated, with the exception of a few cases of advanced syphilis found among old people and some cases occasionally found along the borders of China with other countries. They claim that not only has opium addiction been wiped out, but also there is no drug abuse problem.

While we did not obtain statistics, we were told (and many previous medical visitors have reported) that as a result of these efforts the maternal and infant mortality rates have been greatly reduced; and life expectancy has been prolonged. (A 52-year-old former "landless peasant" told us that "under the old system I would have been dead by now because of starvation, disease, or being drafted into the Kuomintang army.") The Chinese are now experiencing increases in the major chronic diseases similar to those seen in the western industrialized countries; atherosclerotic heart disease, hypertension, stroke, and cancer. Cancer of the lung, formerly quite rare in China, now seems to be increasing. Cigarette smoking is very common and the Chinese have apparently ignored this hazard. The Chinese (as do the Japanese and some other nationals) seem to have a higher rate of cancers of the stomach, liver and paranasal sinuses than is seen in the United States. On the other hand, they have less coronary heart disease and diabetes.

There are essentially two systems of care: (1) Industrial workers, including those who are retired*, get free medical care. Their dependents pay a small fee when they receive care. For example, the fee for a clinic visit is about ten fen.** A family of four, including working parents and two dependent children, might typically have an income of 150 yuan monthly. A 10 fen (0.1 yuan) clinic visit for a dependent child would thus be 0.06 percent of the family's monthly income, or about 15 minutes' pay for the average factory worker, (2) On the farms or in the cities for people who are not industrial workers, there is the "cooperative medical care system." In this system each member pays a nominal fee such as two to three yuan annually, and for each visit will pay a small registration fee of 5 fen. These amounts may vary with the commune or even with the brigade within the commune, depending upon the economy of the particular unit. There are now some more affluent communes or brigades which have reduced or eliminated the medical care fees.

Medical care is a team effort in which are involved physicians, both traditional and "western trained", and various kinds of paramedics. In the agricultural communes, for example, the first echelon of medical care is the "barefoot doctor." The barefoot doctor is a farmer who has been trained to treat minor ailments, give immunizations and health education, instruct in sanitation and provide first aid. To the extent that he or she is trained, the barefoot doctor may also deliver babies, do acupuncture and minor surgery.

Each commune is populated by from 10,000 to 60,000 people dispersed in many villages. Within the commune are 10 to 20 production brigades, a brigade usually corresponding to a village. Within each brigade are a number of production teams. Each team has several barefoo doctors, each brigade has barefoot doctors, nurses, midwives, and regular doctors and small clinics or health stations while the entire commune has a sma hospital of from 40 beds and upwards.

Generally hospitals and clinics hav both traditional and western traine doctors and patients have a choice of th kind of medicine they prefer or need. Th commune hospitals care for minor an chronic conditions. Beyond their capability are the larger hospitals on th county or city level, culminating in th teaching hospitals where care is given fo the more complicated conditions. Period cally a commune may have a visitin team of medical workers from a teachin hospital. The team provides medical care trains barefoot doctors and other medica workers in the field, and gives continuin education programs for doctors and othe health workers.

Similarly the factories have "worke doctors", the analog of the barefo doctors. Just as the barefoot doctor als does farm work, the worker doctor als does factory work. He or she is trained i short courses of three months or more Depending upon the size of the factory o industry, there may be clinics and eve hospitals limited solely to the worker and families in that particular plant o industry. In many cases several plants i the same industry will share a hospital For example, this was the medical car arrangement in the Northwest Stat Cotton Textile Plant in Sian. This plan employs 7,000 workers of whom 6 percent are women. It consists of numerous workshops devoted to differen phases of the process in manufacturin cotton textiles. Each workshop has it own small dispensary. Nearby there is worker's hospital of 66 beds which i shared by this and other textile plants i this locality. These is a nursery for youn children including infants who are bein breast-fed by their working mothers, an a kindergarten for the preschool children Currently there are 600 babies daily a the nursery. In the residential area fo the workers and their families of thi industry there is an outpatient clinic They also have a rest sanitarium for th workers. There are a total of 43 healt workers employed, of whom 40 percen are trained at the university and 60 percent are trained in the factory on the job

The factory also has its own maternity home where babies are delivered. A new mother gets 56 days off after delivery o her baby. When she returns to work she given time off at least twice during ch eight-hour shift for breast-feeding.

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* Recommended retirement age is 60 for men; 55 for women.

** 100 Fen equal 1 yuan. 2 yuan equal $1.00 U.S. but this rate of exchange should not be used in comparing Chinese and U.S. costs of living as the Chinese economy is totally different.

### Medical Education

At the time of "liberation" in 1949, it as estimated that for the approximately 00 million Chinese people at that time here were at the most 10,000 "western-rained" physicians. In addition there ere an unknown, but much larger, umber of traditional doctors. (In contrast, in the United States for a population of 200 million we have 300,000 physicians.) One of the first moves of the ew regime was to incorporate the traditional doctors into the system, both from ecessity and from the belief that the ncient system of traditional medicine was a "treasure house" of medical herapy. Since then the Chinese have mphasized the importance of traditional medicine and today there are eleven chools of traditional medicine and 77 chools of western medicine. In the chools of "western medicine" there is a good deal of instruction in acupuncture and other forms of traditional medicine. Conversely, in the traditional medical schools there is teaching in modern medicine including surgery, aseptic technique, preventive medicine and public health.

Learning in health and medical care begins very early. In primary and middle schools we saw classes in health, including elementary instruction in the values of traditional medicine.

The basic policy of the medical schools, as that of all schools in China, is the "open-door" way; i.e., an open door between the school and the surrounding community. The objective is to create an ongoing exchange of ideas and activities between the school and the people in the community. School children go out to the farms to help the farmers. We saw truckloads of children on their way to help cut the spring wheat and to plant rice. We visited a middle school which operates its own industrial shop for the manufacturing of electronic products.

In medical education, approximately half of the students' three years in medical school is spent in the field. From the beginning of the first year of medical school the students go to the countryside, to learn the common helath problems of the peasants as well as to assist in farm labor, in order to reinforce their appreciation of the living and working conditions of the peasants. The students give one month per year to farm labor. They work under the supervision of their professors who go to the countryside with them. At any one time, one-third of the staff of the teaching hospitals in the large cities are away in the countryside for periods up to one year. At the Peking Medical College the 600 students are divided into groups of 20 to 30 for their work in the countryside or in the classroom. Through the three years they rotate assignments from the countryside to the classroom, gradually progressing from observing to doing, until at the end of the period they are deemed capable of going out into the community as general practitioners.

Integration is stressed: basic and clinical science, theory and practice, research and teaching, prevention and treatment. Through the three years there is approximately one year total of basic science integrated into the curriculum. Approximately 70 percent of the time of the teachers is devoted to teaching and 30 percent to research. Our informants emphasized that there is no conflict or competition between research and teaching, for they are closely integrated.

No student flunks out of school. The assumption is that every student, once admitted, can become a physician. Thus, students help each other. Faculty helps students, and students help faculty. The best students have a social responsibility to raise the level of the slower students.

Selection procedure for medical school is the same as that for enrollment in any other school of higher education: (1) The applicant must have worked at least two years after secondary school in a factory, farm or military unit; (2) He must be recommended by his peers; (3) He must be accepted by the school. Preference is given to workers, peasants and soldiers. The student is interviewed by a faculty committee. The most important criteria seem to be recommendation by the peer group, and political and social consciousness, i.e., the degree to which the student has displayed zeal and loyalty to the values of the present society.

The admission criteria also include good health, and non-married status. Many medical students were formerly barefoot doctors. Women comprise half of the student body.

In order to become a specialist or a member of a medical college faculty, much the same procedure applies; i.e., the physician must work as a general practitioner for at least two years, then must be chosen and recommended by his commune or other organization, then accepted by the school.

### Economics of the Medical Care System

In general, prices in China are set by the state, not by the market. Prices of goods and services deemed to be necessities are deliberately set low. Thus, the prices of rice, housing and medical care are low. The difference between the fees charged and the actual cost is subsidized by the government. The government obtains its revenues from taxes on industrial and agricultural production and on "non-essential" consumer goods which are rather highly priced. There is no income tax.

The cost of health care is further controlled by the system of employing medical workers. Barefoot and worker doctors are paid regular wages by their communes or factories, respectively. The barefoot doctor, like other peasants, is paid on the basis of work production "points", the time given to medical work being taken into account. Full-time medical personnel such as physicians and nurses are paid salaries by their communes, factories, or other institutions where they are employed. Doctors are paid salaries comparable to that of skilled workers. Students in higher education are subsidized in part by the government, by the educational institution, and by their sponsoring organization (commune, factory, or military unit) which pays them stipends for living costs.

It is impossible to calculate the precise costs of the Chinese health care system. Economic, as well as health, statistics are difficult to obtain. The sheer magnitude of gathering such data in an enormous "developing" country should be appreciated. Even in the computer-oriented U.S., one does not encounter total agreement in data and cost-accounting methods in medical care.

### Medical Experiences

During the course of the trip, one of our delegation of 20 became ill. One of us accompanied him to the Capitol Hospital in Peking (formerly the Rockefeller Foundation-supported Peking Union Medical College). We went to an outpatient clinic which serves visitors and foreign nationals. When we arrived about 9:00 A.M., the clinic was full of patients, many dressed in the native garb of African and Asian countries. The patient was registered. We sat for a few minutes and were then placed in an examining room. A female physician, a generalist, came in, took a history and performed a brief physical examination. She then ordered a complete blood count, hemoglobin and urinalysis. The patient proceeded to get these done and upon returning was then seen by a specialist. The specialist took additional history and also did a brief physical examination and wrote a prescription for two drugs. The entire episode took less than two hours and for a foreigner not covered by the national health scheme, cost a total of 4.60 yuan (approximately $2.30 U.S.). This included 2 yuan registration fee, 2 yuan for the laboratory tests and 60 fen for the two medications.

Acknowledgement is made to Carole Ubelacker; Graduate Associate of Economics of the University of Arizona, for her assistance in the explanation of medical economics.

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# Medicine In Mexico II. Health Indices

Charles C. Daschbach and
Robin J. Connolly

As a rapidly developing nation, Mexico's progress in the collection and evaluation of health statistics is quickly outpaced by her population explosion. A large percentage of births and deaths are not registered with the government and the Secretariat of Public Health can only estimate and interpolate rates. After the 1970 census, the crude birth rate was measured at more than 43 per 1,000 persons and recent estimates give 47 per 1,000 persons. Of approximately 13.5 million Mexican women in the childbearing years, only 1.5 million are currently enrolled in any type of family planning program. The government has recently stepped-up efforts in educational family planning with large public campaign posters, **fotonovelas**, and theater groups touring rural areas.

The leading causes of mortality in Mexico today are similar to those in the United States during the early 1900's (Table 1). The deaths primarily due to lack of potable water, hygienic practices, malnutrition and inadequate housing account for more than 30% of the total Furthermore, many of the predisposin factors for pneumonia and secondar infection (e.g., alcoholism, malnutrition debility) are not uncommon and often th underlying cause of these deaths i unrecorded. Also, a large frequency i the categories defined as "all othe causes" (9.2%) and "symptoms and ill defined conditions" (12.4%) may indicat that causes of death among large seg ments have been undiagnosed. Thus, thi distribution of known causes might b

**Table 1. Leading Causes of Mortality in Mexico, 1973** [1]

| Cause of Death | Number of Deaths | Death Rate per 100,000 Population | Percent of Percent of Total Deaths |
|---|---|---|---|
| all causes | 485,915 | 817.1 | 100.0 |
| 1. Pneumonia and Influenza | 67,504 | 120.2 | 14.7 |
| 2. Enteritis and diarrheal disease | 58,321 | 103.8 | 12.7 |
| 3. Diseases of the Heart | 40,782 | 72.6 | 8.7 |
| 4. Certain Diseases of Infancy | 23,898 | 42.5 [2] | 5.2 |
| 5. All other Infective and Parasitic Diseases | 21,702 | 38.7 | 4.7 |
| 6. Malignant Neoplasms | 19,963 | 35.5 | 4.4 |
| 7. Strokes | 13,525 | 24.1 | 2.9 |
| 8. Cirrhosis of Liver | 11,489 | 20.5 | 2.5 |
| 9. Bronchitis, Emphysema and Asthma | 7,985 | 14.2 | 1.7 |
| 10. Tuberculosis of Respiratory System | 7,981 | 14.2 | 1.7 |
| 11. Diabetes Mellitus | 7,774 | 13.8 | 1.7 |
| 12. Avitaminosis | 6,498 | 11.6 | 1.4 |
| 13. Anemias | 5,283 | 9.4 | 1.2 |
| 14. Nephritis and Nephrosis | 4,584 | 8.2 | 0.9 |
| 15. Congenital Anomalies | 3,899 | 6.9 | 0.8 |
| Other and Ill-defined | 157,727 | 280.9 | 34.8 |

[1] from U.N 1974 Demographic Yearbook (excludes deaths due to suicide, homicide and accidents)

[2] 918.3 per 100,000 live births

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From: Third semester medical students at the Autonmous University of Guadalajara. Reprint requests to Mr. Daschbach, c/o 1101 S. Lehigh Dr., Tucson, AZ 85710.

nrepresentative of the situation as a vhole.

Nevertheless, it is uncontested that the ingle disease which most affects the vital tatistics of Latin American health is pidemic diarrhea. In Mexico it remains he principal cause of a high infant nortality rate (62 per 1,000 live births) ind deaths among all children. Over hree-quarters of its victims are under ive years of age. The incidence peaks innually during the summer heat waves ind geographically in the arid north entral region. While it is a symptom of nany different organic gastrointestinal disorders (regional enteritis, malabsorption syndrome, parasitic infections, enteric viruses, etc.) the common denominator is usually a familiar cluster of unsanitary conditions.

In a closely related area, it is believed that parasitosis is the single most underreported cause of morbidity. In 1972 over 48,000 cases of amebiasis and bacillary dysentery were registered. While the problem is most serious in rural Mexico, it is by no means excluded from the metropolitan areas. A recent survey among the poor of Mexico City revealed that over 56% were afflicted with intestinal parasites and more than 52% had two or more varieties.

Another high priority for the current Public Health Secretariat is prenatal care targeted at a perinatal mortality of 918 per 100,000 live births. Toxemia, hemorrhages and infection head the list of maternal and intrauterine mortality. Also the incidence of diabetes in pregnancies has recently increased significantly, with over 800,000 cases in the last year alone. In view of this the government is currently proposing a glucose tolerance test as a requirement for marriage licenses and offers free testing in all government clinics. The Secretariat has also initiated an extensive training program for the thousands of existing rural midwives who have traditionally dominated the custom of home births.

These statistics fail to demonstrate the tremendous progress which Mexico has made combating her health problems. At the turn of the century infant mortality stood at 392 per 1,000 live births, the gross annual mortality rate was 33.6 per 1,000 persons and the average life expectancy was 26.5 years. The obstacles to lowering her incredible mortality rates were not simply a shortage of doctors, hospitals and money, but also a rugged geography, centuries of customs, and abject poverty.

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*U. of A.*
*Grand Rounds*

# Vasodilator Therapy in Coronary Artery Disease
## Part III

W. David Hager, M.D.

**Editors:**
**Jay W. Smith, M.D.**
**Robert Hyland, M.D.**

### Effect of Vasodilators on Myocardial Perfusion:

An important aspect of vasodilator therapy is its effect on myocardial perfusion. It is possible that the ability of vasodilator treatment to reduce myocardial oxygen demands may be augmented by its potential for enhancing coronary perfusion or limited by its potential for reducing myocardial blood flow. Several investigators have used ST segment mapping as a measurement of myocardial ischemia. Awan et al. recently showed that ST segment elevation secondary to an acute myocardial infarction was reduced in patients treated with nitroprusside.[5] Vasodilators may reduce ischemia by two mechanisms. The hemodynamic effect of a vasodilating agent reduces intramyocardial pressure from the epicardial to the endocardial surface so that even with a decreased mean arterial pressure, the transmural perfusion may be improved. Secondly, there may be a direct action of the vasodilator on the coronary vessels, leading to increased perfusion.

The effect of vasodilator therapy on total and regional myocardial blood flow is an area of active investigation. Chiariello, et al. recently compared the effects of nitroglycerin and nitroprusside on the degree of ischemic injury in 10 patients with acute anterior myocardial infarctions.[6] A short review of this report is valuable because this study exposes a potentially deleterious property of some vasodilators.

**COMPARISON of NP and NTG in AMI**

(Clinical Study - 16 Lead ST Map)

| | NP | NTG |
|---|---|---|
| $\overline{AP}$ | ↓24 | ↓14 |
| PCWP | ↓ 5 | ↓ 9 |
| HR | ↑ 12 | 0Δ |
| $\overline{ST}$ | ↑ 2.4 | ↓ 1.4 |

Chiariello et al., Circulation 54:766 1976

Chiariello used a 16-lead precardial map to follow ST segment elevation. Nitroprusside in average doses of 95 μg/min. was infused for 10 minutes. After hemodynamic measurements returned to baseline levels, .3 or .6 mg. of nitroglycerin was given sublingually. Mean arterial pressures and left ventricular filling pressures decreased with both agents, the blood pressure drop being greater with nitroprusside. The heart rate response was also different, increasing with nitroprusside and not changing significantly with nitroglycerin. The ST segment mapping revealed further elevation with nitroprusside and less ischemia with nitroglycerin (Fig. 8). It appeared that nitroprusside extended ischemia as measured by ST segment mapping despite its hemodynamic unloading effects.

To evaluate this result, a branch of the left anterior descending coronary artery was ligated in 14 dogs. An epicardial ST segment map was used to follow the degree of ST segment elevation during the experimental infarcts. Readings were made before and during treatment, first with nitroprusside and then with nitroglycerin. Regional myocardial blood flow was measured at each step by injecting gamma emitting radionuclides into the left atrium. The animals were sacrificed and biopsies from normal and ischemic areas of myocardium were analyzed for radioactivity. The biopsies were further divided into epicardial and endocardial segments.

From: Arizona Health Sciences Center, University of Arizona College of Medicine, Veterans Administration Hospital, Tucson, Arizona
Presented February 2, 1977. Dr. Hager, Asst. Professor of Medicine, Dir. of CCU, VAH.

In this phase of Chiariello's study, the hemodynamic effects of nitroprusside and nitroglycerin were quite similar. However, the ST segment mapping again showed further elevation with nitroprusside and a reduction with nitroglycerin. Nitroprusside appeared to reduce perfusion to the iscemic area, while nitroglycerin increased it. The radioactivity assessment of regional myocardial blood flow documented a decrease in transmural flow to both the ischemic and normal myocardium with nitroprusside. In addition, the ratio of endocardial to epicardial flow in the ischemic zones decreased slightly with nitroprusside and significantly increased with nitroglycerin (Fig. 9). Thus, nitroprusside failed to distribute coronary flow in a manner favorable to ischemic muscle and in particular to the vulnerable subendocardium. Since the hemodynamic effects of the drugs were similar, Chiariello argued that the difference lay in the respective sites of action. Nitroglycerin seemed to affect the conductance vessels, improving flow to ischemic muscle. Nitroprusside appeared to influence the resistance arterioles, possibly diverting flow from the ischemic zones.

COMPARISON of NP and NTG in AMI

(Animal Study: ST Mapping; Radionuclide Perfusion)

| | NP | NTG |
|---|---|---|
| $\overline{ST}$ | ↑ | ↓ |
| Nonischemic Transmural Flow | ↓ | $\bar{0}^{\Delta}$ |
| Ischemic Transmural Flow | ↓ | ↑ |
| Ischemic Endo/Epi | $\bar{0}^{\Delta}$ | ↑ |

Chiariello et al., Circulation 54:766 1976

Fig. 9

This study is one of several and must not be taken as the definitive work on the effect of nitroprusside and nitroglycerin therapy. However, its results do illustrate one of the potential complications with vasodilator therapy.

## The Coronary Steal Phenomenon:

The redistribution of coronary flow in favor of normal myocardium has been termed the coronary steal phenomenon. The vascular bed distal to a significant coronary obstruction is already maximally vasodilated secondary to hypoxia. In the absence of collaterals and in the presence of an agent which influences primarily the resistance arterioles, the normal vascular bed may dilate to a greater extent than the ischemic bed, causing a coronary steal and further depriving the already weakened myocardium of oxygen. When collaterals are present, flow to the ischemic zone may be enhanced, especially if a vasodilator agent is present which expands the conductance arteries (Fig. 10).

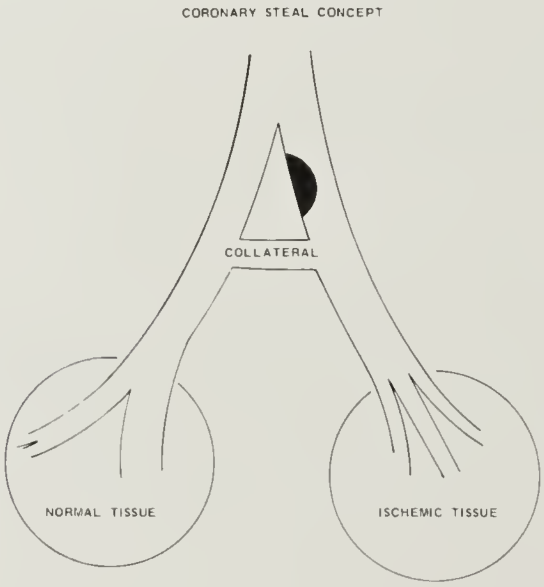

Fig. 10

## The Balance of Vasodilator Therapy:

Clinical studies have documented the possibilities of both increased and decreased myocardial oxygen consumption with vasodilator therapy. Likewise, ischemia may spread or be reduced. The effect on coronary perfusion may support or detract from the hemodynamic actions. Whether infarct size is reduced or increased depends on the balance of the interaction of all the effects of vasodilator therapy. If there is a favorable balance between the resultant supply and demand of myocardial oxygen, clinical improvement takes place (Fig. 11).

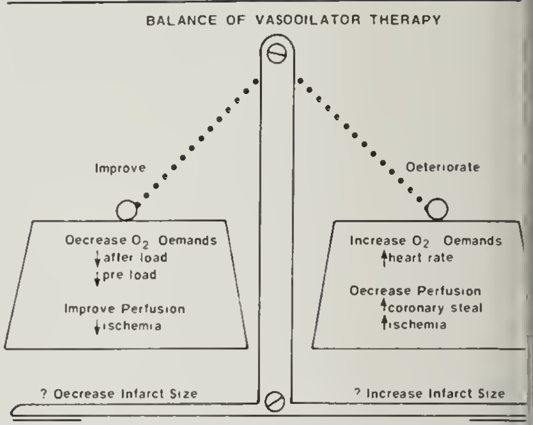

Fig. 11

## Vasodilator Agents:

Several clinical reports support th position that various vasodilators function at different sites (Fig. 12). Som

VASODILATOR SITE OF ACTION

| Agent | Venous Effect (Preload) | Arterial Effe (Afterload) |
|---|---|---|
| NTG | + + | + |
| Isordil | + + | + |
| Nitroprusside | + | + + |
| Hydralazine | O | + + |
| Phenoxybenzamine | O | + + |
| Trimethaphan | O | + + |

Fig. 12

agents primarily influence venous tone while others affect the arterial circulation. For example, isosorbide dinitrate and nitroglycerin seem to act predominantly on venous tone, whereas nitroprusside unloads the arterial circulation to a greater extent. Hydralazine and phenoxybenzamine are pure afterload reducing agents. There is also variation in the timing, peak action, and duration of action of the vasodilator preparations Sublingual nitroglycerin has a transient effect, whereas isosorbide dinitrate may last up to 4 hours. Nitroprusside's effect is almost instantaneous and continuous without tachyphylaxis as long as an infusion is continued. Hydralazine is an effective oral agent for chronic therapy (Fig. 13).

VASODILATOR PREPARATIONS

| Agent | Route | Dose | Peak Action | Duration of Effect |
|---|---|---|---|---|
| NTG | Sublingual | 6 mg | 5 - 10 min. | 20 min |
| NTG | Ointment | 1.5 - 4 inches | 20 min. | 3 - 6 hrs |
| Isordil | Sublingual | 10 mg | 20 - 60 min | 1.5 - 4 hrs |
| Isordil | Chewable | 10 mg | 15 min. | 3 hrs |
| Isordil | Oral | 20 mg | 30 min. | 4 5 hrs |
| Nitroprusside | IV | 30 - 200 μg/min | instant | ——— |
| Hydralazine | PO | 200 - 300 mg/day | ——— | chronic |

Fig. 13

The versatility in the site of action, oute of administration, and duration of ction is important in selecting therapy or any particular patient. In the acute nfarct, it is mandatory to be able to tirate a desired vasodilator effect, and itroprusside, with its rapid onset and essation of action, is an ideal agent. The onger-acting agents are more applicable n the treatment of chronic left ventricular failure. It becomes possible thereore to select an agent depending on the linical situation. If a depressed cardiac ndex is the major problem and marked entral congestion is not present, then an afterload-reducing agent such as niroprusside or hydralazine is best. If lyspnea and central congestion dominate he clinical picture, an agent reducing reload is indicated. Finally, if both cenral congestion and inadequate peripheral perfusion are present, combination asodilator therapy such as isosorbide linitrate plus hydralazine is beneficial Fig. 14).

SELECTION OF VASODILATOR AGENT

| Clinical Problem | $R_x$ |
|---|---|
| .I., Mild Central Congestion | Afterload Reduction |
| rked Central Congestion<br>. Maintained | Preload Reduction |
| mbined ↓C.I., ↑LVFP | Combined Preload and Afterload Reduction |

g. 14

FOLLOW-UP STUDIES:

Little data on the follow-up of patients reated with vasodilators is available. In he acute myocardial infarction setting, he important question is whether or not vasodilators salvage myocardium, decrease infarct size, and hence increase survival. Shell and Sobel noted that among patients treated with trimethaphan during acute infarction the one month mortality was 20% as opposed to 70% among the patients who had no afterload reduction.[7] Patients were matched to have similar predicted large infarct size according to CPK enzymology. Afterload reduction decreased the observed infarct size 24% over the predicted infarct size. Data on long-term follow-up were not available.

Chatterjee et al. studied 43 patients with severe pump failure who were treated with nitroprusside during acute myocardial infarctions.[8] Severe pump failure was defined as a stroke work index ≤ 20 g-m/m$^2$ and a left ventricular filling pressure greater than 15 mm Hg. Previously, a hospital mortality of 80% had been documented in this group of patients. In Chatterjee's study, 24 of 43 (56%) were discharged from the hospital, but of these survivors 14 died within 25 months. Thus, in the entire group, survival of 24 months was only 10 of 43 or 28%. Although vasodilator therapy had improved immediate survival, the long-range prognosis in these severely ill patients was still unfavorable.

Further prospective trials are needed to evaluate the impact of vasodilator therapy on long-range survival and the quality of life in coronary artery disease. The Veterans Administration Cooperative Trial with nitroprusside vasodilator therapy during acute myocardial infarction is such a prospective study aimed directly at assessing the influence of vasodilator therapy on infarct size and survival. Until more data are available, vasodilator therapy must be administered with the understanding that there are both benefits and problems with its use. Careful selection of a vasodilator agent according to the clinical situation is necessary to achieve the desired therapeutic goals.

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# Arizona Has A Winner

By now many of you have read in **Medical Memos** or heard that one of ARMA's members, Dr. Dan Cloud of Phoenix, has been re-elected to the AMA's Board of Trustees for his second three year term. This occurred at the AMA Annual Convention in San Francisco on June 23rd. The victory in itself is newsworthy but more of the story needs to be recited to our membership.

The AMA Officers, Board of Trustees, and Council members are elected by the delegates from the 50 states, the territories, and the members of the various sections. Only the delegates can cast ballots with no balloting by alternates unless they are duly registered as the replacement for their delegate.

There are many, many capable and active people in organized medicine. The top echelon of AMA Leadership doesn't just arrive there in some miraculous or magical manner. They basically get there as a result of proven records of interest and hard work on behalf of the profession itself and its membership in general. Secondarily, they arrive there by the usual proven method of elected officials in general; that being an effective campaign.

Dan's re-election really came as no surprise to us of the Arizona Delegation. We all know Dan to be a dedicated and tireless worker who had been very effective during his first term. After choosing to run again, Dan decided to campaign in much the same way he did three years ago and to this end he sought Scott Chisholm's help again as campaign manager. Although Scott felt no great fear concerning the ultimate outcome, he elected to run Dan's campaign as if he were "running scared." Consequently the support of the Rocky Mountain Conference (Arizona, Nevada, Utah, Idaho, Montana, Wyoming, Colorado and New Mexico) was sought and enthusiastically given. As the Rocky Mountain Conference was fielding no other candidates, the numbers in the ranks of campaign workers suddenly increased. Cloud campaign buttons appeared everywhere. Dan and Scotty visited the many, many state and conference caucuses. The Rocky Mountain Conference had a reception one evening, and the Arizona Delegation held receptions on two other evenings on Dan's behalf. Many people talked up Dan Cloud, and it all paid off.

Dan's popularity became evident when not only the Rocky Mountain Conference, but also nine other state Delegations got up to second the nomination made by Scott Chisholm. The real thrill came when the returns showed Dan to be the top vote-getter with 189 out of a possible 248 votes on the first balloting. That has to be considered a landslide victory!

Dan certainly is due our most rousing congratulations. Scott and all the other people who worked long and hard in the campaign deserve our deepest thanks. It is indeed a rare opportunity for a small state like Arizona with only three delegates in the House of 248 to be represented at the top level of organized medicine. The AMA Officers and Board of Trustees number only 18 men; and thanks to Dan Cloud an ARMA member has successfully earned his right to remain among that elite group.

With success, however, comes responsibility. We all know that Dan Cloud will successfully discharge his duties to the AMA, to ARMA, and to each of us as practicing physicians. By the same token, we owe Dan a great degree of responsibility also. Whenever Dan needs our help or input we should be there in full force. No one can deny that trying times lay ahead of us. With all of our help and with effective people like Dan Cloud, and strong organizations like ARMA and AMA, perhaps we can prevail in the defense of the best obtainable health care for our patients.

John F Kahle, M.D., President
Arizona Medical Association, Inc.

# n Appreciation

In the October 1974 issue of ARIZONA EDICINE, Neal A. Vanselow, M.D., riting his first DEAN'S PAGE, highghted the growth of the College of edicine to that date. Particularly imressive were the successes during the ollege's infant years under the leaderhip of his predecessors, Drs. DuVal and ayton. Dr. Vanselow identified for the ollege new goals for the adolsescent ears to follow. Among these goals were n analysis of the College's three year urriculum, and the expansion of several nternal programs. The major challenge, owever, was a change in priorities oward needs outside the College walls.

The highest priority was given to eveloping a coordinated program of ontinuing medical education for Arizona hysicians. To this end, George D. omerci, M.D., was recruited by the ollege with the assistance of the Arizona ledical Association officers and its Medial Education Committee. The College stablished a standing Committee on ontinuing Medical Education and Outeach. The College has since become an rganization accredited for Continuing ledical Education by the American ledical Association, and the programs ave been highly regarded (**Arizona ledicine**, January, 1976).

Another new priority was implied vhen Dr. Vanselow called attention to he health care needs in rural Arizona. Much has been accomplished since then hrough programs such as the Arizona Perinatal Program (operated by the Department of Obstetrics and Gynecology in collaboration with the Arizona Medical Association Foundation), the Mobile Eye Clinic (operated by the Ophthalmology Section of the Department of Surgery), and the rural health programs of the Department of Family and Community Medicine (Southern Arizona Rural Health Initiative, Mobile Health Clinic and with ArMA, the Arizona Health Service Corps). These programs, along with incentives to attract medical students from rural areas who are willing to return there to practice, student preceptorships in rural areas, and joint programs with the College of Nursing and Indian Health Service to prepare nurses for nurse practitioner roles, add substantially to meeting the long range goal of continued provision of health care in Arizona's underserved areas (**Arizona Medicine**, March 1977).

During his tenure as Dean, Neal Vanselow did not neglect the College of Medicine's internal needs. The faculty study of the curriculum led to a recommendation to plan a new four year curriculum. The new curriculum, which begins with the class entering in August, 1977, will preserve many innovative aspects of the shorter three year curriculum — flexibility, interdepartmental teaching, and substantial elective time. The new curriculum will include a greater amount of unscheduled time and will provide additional instructional weeks for material not now offered.

There has been growth in enrollment. In 1974, the College student body numbered less than 270. The enrollment with the entering class this August will exceed 280. Additionally, there are six students participating each year in the Fifth Pathway Program, a program providing a year of clinical experience for Arizona residents who have completed their medical education in a foreign medical school. At successful completion of the year's experience, Fifth Pathway participants are eligible to apply for house officer training in U.S. hospitals. Further growth in the student body will occur because of the four year curriculum: after the transfer class of up to 80 students enters in 1978, the total enrollment will be maintained at 356.

New directions have come to several departments. The Departments of Surgery and Internal Medicine gained new department heads through the appointments of Drs. Stephen Wangensteen and Rubin Bressler. The establishment of a University-wide Department of Biochem-

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istry followed departmental review of the College Department of Biochemistry. The University was fortunate in persuading the distinguished biochemist, Herbert E. Carter, Ph.D., to assume the leadership of this important department. The review process leading to the decision to develop the campus-wide department was an important innovation initiated by Dr. Vanselow.

Research has flourished in the past three years. Establishment of a Long Range Planning Committee, development of a revised set of promotion and tenure guidelines, and initiation of a streamlined process for academic appointment and promotion also add to the long list of accomplishments.

These accomplishments are the tangible measurements of the exciting and stimulating three years Neal Vanselow gave to Arizona. Not so easily measured, but no less important, are the attitude toward excellence, the integrity, the openess and the strong leadership he brought to the Dean's Office. The administration, the faculty, the students, the physicians and indeed, the people of Arizona say "Thank you, Neal. We are greatly blessed by your contributions and the legacy you leave. Our best wishes for success at the University of Nebraska Health Science campus in your new role as Chancellor."

Louis J. Kettel, M.D.,
Acting Dean,
U of A Health Sciences Center

## AMA Uncovers Inaccuracies In HEW Report

HEW Secretary Joseph A. Califano, Jr. has apologized for the large number of inaccuracies in HEW's listing of physicians who received Medicare funds in excess of $100,000 in 1975.

In his letter to AMA Executive Vice President James H. Sammons, M.D., the Secretary stated:

"I am deeply distressed at the number of errors, and I regret any embarrassment that may have been caused to any of your individual members. I have asked Robert Derzon, the Administrator-Designate of the new Health Care Financing Administration, to review the entire matter with the view toward taking whatever actions are necessary to prevent a situation like this from arising again."

On March 10, 1977, learning that the Department of Health, Education and Welfare was preparing to release a list of physicians, groups and clinics, and independent laboratories which had received more than $100,000 in Medicare payments during 1975, James H. Sammons, M.D., Executive Vice President of the American Medical Association, released a statement deploring the impending HEW action. Dr. Sammons stated that the release would serve "only to badger a large segment of the profession and to establish guilt by innuendo."

Within hours of publication of the HEW release, the offices of the AMA began receiving calls from physicians stating that the information released concerning them was in error.

Many reported they were listed by HEW as solo practitioners when they were, in fact, members of group practices, specialty groups, and even large clinics. In addition, said many of the physicians, the amounts attributed to them were incorrect — from a span of a few thousand dollars to those who had no Medicare income whatsoever during 1975.

As it became apparent that a significant rate of error existed in the information released by HEW, it was determined that the AMA had a responsibility to its members to see just how erroneous the material given to the news media was, and to attempt to correct the misrepresentation of physician Medicare earnings which was being promulgated, particularly in front-page stories in newspapers across the nation.

The AMA Departments of Public Relations and Public Affairs, with assistance from state medical societies, began a telephone survey of the list of 409 physicians listed as solo practitioners During the next three weeks, 208 — or slightly more than half — of these doctors were contacted, and from conversations with them, it was found that in almost two out of every three instances the information presented on the HEW list was in error. From contact with the 208 physicians, it was determined that the designation of them as solo practitioners was incorrect in 102 instances. Their practices ranged from partnerships to 70-physician clinics, yet they had been singled out and named as recipients of the entire amount paid the group practice. Some physicians had been residents during 1975, with no Medicare income whatsoever; some were hospital or university staff members on salary, with all Medicare payments going to the institution. For nine of the 208 physicians, the amount of payments listed for them was inaccurate, from total error to a difference of several thousand dollars. And for 24 of the doctors, both the solo practice designation and the amount listed were incorrect, leaving out 73 of the 208 physicians who felt the information concerning them was "probably correct." When the survey was completed on April 8th, an error rate of 64.9 per cent was established for the information on physician Medicare earnings as reported by HEW.

While AMA personnel were specifically contacting only those physicians listed as solo practitioners, calls continued to come in concerning physicians who were designated under the classification of "groups and clinics," but where the information concerning their earnings was completely in error. This group included physicians who had been dead or retired before 1975 — some as long as 12 years. Others had left the group identified prior to 1975; still others had come into the group during the last month of the year. Yet these physicians had been listed as the recipients of hundreds of thousands of dollars in Medicare earnings during 1975. A total of 50 such reports was recorded.

On April 8th, Dr. Sammons forwarded all the material describing the findings on the high rate of error to HEW Secretary Joseph Califano, together with a letter in which Dr. Sammons requested an apology to the hundreds of physicians who had, as a result of the HEW release, been placed in embarrassing, distressing, and possibly dangerous situations because of grossly incorrect and misleading information.

The entire packet of information was forwarded to each physician contacted by the AMA and to the local newspapers in the physician's area of practice, and Dr. Sammons asked the newspaper editors to take the opportunity and the responsibility of publishing correct facts concerning the physicians' 1975 Medicare earnings.

The list of errors identified by the AMA was distributed by HEW to the regional Bureau of Health Insurance offices across the country, with instructions that regional personnel are to check each inaccuracy cited by the AMA.

With the public release of the AMA findings, a number of physicians who had not been contacted during the AMA survey called or wrote to report the errors made on their listings by HEW, and as each new report was received, the information was forwarded to HEW, to be added to the original list.

While the AMA survey was a long and arduous task, it was the only appropriate action the AMA could consider in the protection of all physicians against inaccurate and misleading representations of their Medicare earnings. As Dr. Sammons stated, "Dedicated physicians, seeking to serve a patient population of all ages, must not be abused and victimized for their devotion to the demanding task of attempting to fulfill the health needs of this country."

Your American Medical Association is working for you and for those for whom you have a medical or personal concern. AMA's future and yours are one and inseparable. If you are a member, your support has made possible these activities and countless others. If you are not a member, shouldn't you be?

Join organized medicine. We can do much more together!

AMA Public Affairs Division

## *Correspondence*

## How Do You Stack Up?

Patients do a lot of things which bug doctors, besides not paying their bills promptly and washing their feet and armpits just before an appointment. (PTA bath.)

Well, here are some things which bug patients according to a random poll of females and a few males between the ages of 20-48. "IT REALLY BUGS ME WHEN THE DOCTOR . . ."

Stands all the time, shifting from one foot to the other as though he has a weak bladder or an itch.

Doesn't answer a simple point-blank question like, "What's wrong with me."

Says, when I ask, "What's wrong with me?", "That's a good question," or "I don't know," (With all those books groaning on the wall, he can't find anything about what I've got or what's got me? Even I can guess it's either cancer or VD, 30-50.)

Eats garlic for breakfast and/or wears one of those little bags of it around his neck.

Gets the cone on backwards when he uses the otoscope.

Makes me wait in the waiting room and then in the cubicle, doesn't apologize for being late and then doesn't subtract the waiting time from the bill.

Asks me what's wrong and then argues about my diagnosis. If he didn't want to know what I thought, why'd he ask me! I came to ask him, anyway!

Supplies skimpy gowns (which should have arrows pointing which way they want them on, except for proctologists and gynecologists, they do have a problem), if we wanted something revealing, we'd have gone to Frederick's . . . Inadequacy is trying to hide something in a gown that comes mid-thigh on the 36-lb. mannequin at the medical supply house.

Makes me feel stupid. I call and ask for penicillin for my kid's chest infection (27th time that year) and he has me bring him in and then says, "Yup, chest infection, here's a prescription for some penicillin."

Attributes all ailments to sex problems. I went in because of a sinus infection (no evidence of grossly enlarged nostrils), and the doctor wanted to know how often I had intercourse.

Treats my kid for ear infections for ten years and then when I finally was referred to an ear specialist, I found out that the kid had a bean in his ear.

Finally tells me what is wrong in such big words and so fast that I can't even understand him. (Why can't an upper respiratory infection be a cold?)

Makes me pay his bill before he'll release my clothes; gets the mailman to deliver the bill before I'm home from the doctor's office or hospital.

Struts in, admires what a great scar he left and what great surgery he did and then leaves before I can tell him how rotten I feel.

Keeps his speculum (OB/GYN) in crushed ice until two seconds before insertion. (No wonder some women are frigid . . . haven't thawed out from the annual visit last year.)

If our scientific expose has struck a nerve, we hope you can correct the painful situation. If you can't, remember the random poll was very random; this reporter called a few people whose phone numbers were recalled instantaneously. These individuals were possibly the only unsatisfied (medically) patients in most of Phoenix proper. If your ego emerged unscathed, keep up the good work and/or continue to effectively satisfy your patients.

name withheld on request

# *In Memorium*

## Trevor Goff Browne, M.D.

## 1891-1977

Canadian by origin, teacher by temperament, physician by training, humanitarian by choice; these are a few of the attributes of this feisty physician and civic leader.

Trevor was naught if not positive, frosty when nettled, but serene in his concern for the plight of his patients and students.

He spanned the flight of events from "Tallow-tip to Television" and made the journey in fashion. Born in a mid-continent Canadian farming community, orphaned at the age of three, he received the reluctant lodging of a maternal maiden aunt, until he completed high school, (a three year course then, in Canada). He knew well by then "I had to take care of myself" and at that propitious moment he was offered a temporary teaching position in a distant Sasketchewan country school. A temporary teaching permit secured — he was off on a $10 harvester special to the wheat prairie which reached from horizon to horizon. By the time he was eighteen summers young, he was principal in the Melville town school, a town of 4,500 serene souls.

The board was reluctant, questioning his age, "they ran the last man out". Browne was long on repartee, "well, they won't run me out, I haven't any place else to go". He stayed for three years and left for McGill Medical School in Montreal — it still retained the aura and distinction of Sir William Osler.

Completed medical school in 1922, broke, was offered a fellowship with Wolbach of typhus acclaim at Harvard. Shortly before this, he had been offered a scholastic honor, but refused it because a black Jamacian with better grades was passed over. This staunch feeling for equal rights was inherent, and Dr. Todd who maneuvered him to Boston, recalled Browne's refusal to this previous honor and nominated him.

Two years with Wolback, two years over at the Childrens Hospital with Blackfan, then on to Michigan to teach pediatrics at the University of Michigan, in 1927, he took a position with the Kellog Foundation in Battle Creek, found it on the downgrade, bought a Model T Ford and headed west, wintered as a physician to the Furnace Creek Inn in Death Valley, met Orville Harry Brown of Phoenix who persuaded him to try the Phoenix desert.

Almost immediately he was appointed school physician and filled that post for almost thirty years here in Phoenix. He established a free clinic at St. Monica's while it was still a building by Emmett Mclaughlin. He served on the board of the hospital from its inception, and was probably the only physician on the staff not to be dismissed more than once by McLaughlin, and that is something of a record in itself. He served on the School Board longer than any other Phoenician and has a school named in his honor. He was the co-founder of the Urban League, and a prime mover in the founding of the Little Theater.

The preceeding is a bare bone sketch of this busy man. When asked how many students he had aided financially here in the valley, he rejoined, "that would be ostentatious" and moved the subject.

With diminished sight and sound, his last years were a travail. So if you would look upon the heritage of Trevor Browne, look about you. He touched and enlightened human affairs all over the valley.

# *ArMA Reports*

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

## EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona on Friday May 20, 1977 convened at 8:09 p.m., John F. Kahle, M.D., President and Chairman, presiding.

### MINUTES

The minutes of the meeting held April 26, 1977 were approved as distributed.

### FDA MEETING

IT WAS MOVED AND CARRIED TO AUTHORIZE ONE OF THE FOLLOWING TO ATTEND THE FIRST REGIONAL FOOD & DRUG ADMINISTRATION AD HOC PROFESSIONAL MEETING SCHEDULED FOR JUNE 6, 1977 IN SAN FRANCISCO — DERMONT W. MELICK. M.D., FREDERICK C. SCOTT, M.D. OR GORDON L. RITTER, D.O.

### REQUEST FOR EQUIPMENT

The letter from the Navajo Community College (Nancy E. Thompson, M.D.) requesting visual aids was referred to the Auxiliary and the Association of Detail Men.

### JUNE MEETING

It was announced that the June 24th meeting of the committee is cancelled.

### OTHER BUSINESS

Dr. Richmond, President of Pinal County Medical Society, and Dr. Ward, President of Maricopa County Medical Society, commented briefly on activities ongoing in their respective counties. Dr. Ward reported that there is a move in Maricopa County to change the county bylaws in such a way as to make membership in ArMA voluntary. This apparently resulted from the recent action of the House of Delegates to maintain unified membership in spite of the recent membership polls in favor of doing away with unified membership.

### BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association, Inc. held in the Borein Room of the Hyatt Regency Hotel, Phoenix, Arizona on Saturday, April 30, 1977, a quorum being present, convened at 12:44 p.m., John F. Kahle, M.D., President and Chairman, presiding.

### COMMITTEE CONFIRMATION

IT WAS MOVED AND CARRIED TO CONFIRM THE FOLLOWING COMMITTEE APPOINTMENTS:

### ARTICLES OF INCORPORATION AND BYLAWS COMMITTEE TERM 1977-78

*Charles E. Henderson, M.D., Chairman
*Philip E. Dew, M.D.
*Richard L. Dexter, m.d., President-Elect
*Paul B. Jarrett, M.D.
*John F. Kahle, M.D., President
*Derrill B. Manley, M.D., Secretary
**W. David Rummel, M.D.
*William C. Scott, M.D.
**Willard F. Worthen, M.D.
*Clarence E. Yount, Jr., M.D.

**Indicates new appointment or reappointment.*

### BENEVOLENT AND LOAN FUND COMMITTEE

| | TERM |
|---|---|
| *Arthur V. Dudley, M.D., Chairman | 1977-78<br>1976-79 |
| John T. Clymer, M.D., Treasurer-Spec | 1977-78 |
| John T. Clymer, M.D., Treasurer-Spec | 1977-78 |
| Daniel C. DeBoer, M.D. | 1976-79 |
| Richard L. Dexter, M.D., President-Elect | 1977-78 |
| *R. Lee Foster, M.D. | 1977-80 |
| Andrew M. Goldner, Ph.D., Assoc. Dean Academic Affairs, College of Medicine | 1976-79 |
| John F. Kahle, M.D., President | 1977-78 |
| Edward J. Lefeber, M.D. | 1975-78 |
| Derrill B. Manley, M.D., Secretary | 1977-78 |
| **Richard A. Matthews, M.D. | 1977-80 |
| Cecil C. Vaughn, Jr., M.D. | 1976-79 |
| Karl E. Voldeng, M.D. | 1976-79 |

### FINANCE COMMITTEE

| | TERM |
|---|---|
| John T. Clymer, M.D., Chairman | 1977-78 |
| Robert F. Crawford, M.D. | 1976-79 |
| Richard L. Dexter, M.D. | 1976-79 |
| Herbert G. Erhart, Jr., M.D. | 1975-78 |
| **Melvyn Goldsmith, M.D. | 1977-80 |
| **Jerry W. Haggard, M.D. | 1977-80 |
| John F. Kahle, M.D. President | 1977-78 |
| **John W. Kennedy, M.D. | 1977-80 |
| **Christopher T. Maloney, M.D. | 1977-80 |
| Derrill B. Manley, M.D., Secretary | 1977-78 |
| Theodore L. Mobley, M.D. | 1976-79 |
| *Seymour I. Shapiro, M.D. | 1977-80 |
| George Wallace, M.D. | 1975-78 |
| George H. Yard, M.D. | 1976-79 |

### GOVERNMENTAL SERVICES COMMITTEE

| | TERM |
|---|---|
| *Wallace A. Reed, M.D., Chairman | 1977-78<br>1976-79 |
| John A. Ash, M.D. | 1976-79 |
| William M. Davis, M.D. | 1976-79 |
| Richard L. Dexter, M.D., President-Elect | 1975-78 |
| Donn G. Duncan, M.D. | 1975-78 |
| Walter R. Eicher, M.D. | 1975-78 |
| Lloyd S. Epstein, M.D. | 1976-79 |
| John F. Kahle, M.D., President | 1975-78 |
| Charles Kalil, M.D. | 1975-78 |
| *Louis C. Kossuth, M.D. | 1974-77 |
| Derrill B. Manley, M.D., Secretary | 1976-79 |
| Joseph L. Marcarelli, M.D. | 1975-78 |
| Dermont W. Melick, M.D. | 1976-79 |
| **Douglas Outcalt | 1977-80 |
| Helen M. Roberts, M.D. | 1975-78 |
| **Albert Rosenblatt, M.D. | 1977-80 |
| *Marvin C. Schneider, M.D. | 1977-80 |
| Charles A. Trahern, M.D. | 1977-80 |

### GRIEVANCE COMMITTEE

| | TERM |
|---|---|
| Edward Sattenspiel, M.D., Chairman | 1977-78 |
| Richard W. Abbuhl, M.D. | 1976-79 |
| **William E. Berkley, M.D. | 1977-80 |
| Walter Brazie, M.D. | 1975-78 |
| **James E. Campbell, M.D. | 1977-80 |
| Philip E. Dew, M.D. | 1975-78 |
| Richard L. Dexter, M.D., President-Elect | 1977-78 |
| *David E. Glow, M.D. | 1977-80 |
| John B. Jamison, M.D. | 1975-78 |
| John F. Kahle, M.D., President | 1977-78 |
| Philip W. Kantor, M.D. | 1976-79 |
| James N. Lane, M.D. | 1977-80 |
| Derrill B. Manley, M.D., Secretary | 1977-80 |
| Richard T. McDonald, M.D. | 1976-79 |
| *Albert J. Ochsner, M.D. | 1977-80 |

### HEALTH MANPOWER COMMITTEE

| | TERM |
|---|---|
| *Louis C. Kossuth, M.D., Chairman | 1977-78<br>1977-80 |
| David Beyer, Medical Student | 1976-79 |
| *Casey D. Blitt, M.D. | 1977-80 |
| *Bruce N. Curtis, M.D. | 1977-80 |
| **Sheldon Davidson, M.D. | 1977-80 |
| Richard L. Dexter, M.D., President-Elect | 1977-78 |
| John F. Kahle, M.D., President | 1977-78 |
| John J. Kelley, M.D. | 1976-79 |
| Alexander Kelter, M.D. | 1975-78 |
| Edward J. Lefeber, M.D. | 1975-78 |
| Roger A. Lueck, M.D. | 1975-78 |
| Derrill B. Manley, M.D., Secretary | 1977-78 |
| Marcus M. Marble, M.D. | 1976-79 |
| *Dermont W. Melick, M.D. | 1977-80 |
| *Andrew W. Nichols, M.D. | 1977-80 |
| **Stuart L. Posner, M.D. | 1977-80 |
| **Morris E. Powell, M.D. | 1977-80 |
| James S. Pucelik, M.D. | 1976-79 |
| **Alfonso Puyana, M.D. | 1977-80 |
| **Melvin I. Roth, M.D. | 1977-80 |
| Robert St. John, M.D. | 1975-78 |
| H. Stephens Thomas, M.D. | 1975-78 |
| **Anthony F. Vuturo, M.D. | 1977-80 |
| Herbert L. Winograd, M.D. | 1975-78 |

### HISTORY AND OBITUARIES COMMITTEE

| | TERM |
|---|---|
| **Marshall B. Block, M.D., Chairman** | 1977-78 |
| Francis J. Bean, M.D. | 1976-79 |
| Walter Brazie, M.D. | 1976-79 |
| Richard L. Dexter, M.D., President-Elect | 1977-78 |
| G. Bland Giddings, M.D. | 1976-79 |
| John R. Green, M.D. | 1976-79 |
| John F. Kahle, M.D., President | 1977-78 |
| **John W. Kennedy, M.D. | 1977-80 |
| Derrill B. Manley, M.D., Secretary | 1977-78 |
| Abe I. Podolsky, M.D. | 1975-78 |
| **W. David Rummel, M.D. | 1977-80 |
| Jay L. Sitterley, M.D. | 1976-79 |
| **William C. Weese, M.D. | 1977-80 |

### LEGISLATIVE COMMITTEE

| | TERM |
|---|---|
| *Selma E. Targovnik, M.D., Chairperson | 1977-78<br>1976-79 |
| Richard W. Abbuhl, M.D. | 1975-78 |
| Harrison G. Butler, M.D. | 1975-78 |
| *James E. Campbell, M.D. | 1977-80 |
| John S. Carlson, M.D. | 1975-78 |
| W. Scott Chisholm, M.D. | 1976-79 |
| Sam C. Colachis, M.D. | 1976-79 |
| Richard L. Collins, M.D. | 1975-78 |
| Richard L. Dexter, M.D., President-Elect | 1977-78 |
| Michael R. Geyser, M.D. | 1976-79 |
| Donald F. Griess, M.D. | 1975-78 |
| *John P. Holbrook, M.D. | 1977-80 |
| James M. Hurley, M.D. | 1977-80 |
| John F. Kahle, M.D., President | 1977-78 |
| Jack M. Layton, M.D. | 1976-79 |
| Derrill B. Manley, M.D., Secretary | 1977-78 |
| Gerald Marshall, M.D. | 1975-78 |
| Richard McGill, D.O. | 1975-78 |
| *Gerald McNally, M.D. | 1977-80 |
| Donald R. Miles, M.D. | 1977-80 |
| R. Michael O'Harra, M.D. | 1976-79 |
| Ratibor Pantovich, D.O. | 1975-78 |
| **Kent L. Pomeroy, M.D. | 1977-80 |
| *Wilfred M. Potter, M.D. | 1977-80 |
| *Edward Sattenspiel, M.D. | 1977-80 |

### MATERNAL AND CHILD HEALTH CARE COMMITTEE

| | TERM |
|---|---|
| *William C. Scott, M.D., Chairman | 1977-78<br>1976-79 |

| | |
|---|---|
| Frederic W. Baum, M.D. | 1975-78 |
| Wayne Beck, M.D. | 1976-79 |
| James F. Blute, III, M.D. | 1976-79 |
| Norman B. Brown, M.D. | 1977-80 |
| Walter B. Cherny, M.D. | 1977-80 |
| C. Donald Christian, M.D. | 1975-78 |
| Warren A. Colton, Jr., M.D. | 1975-78 |
| *Owen L. Cranmer, M.D. | 1977-80 |
| *William J. R. Daily, M.D. | 1977-80 |
| Jack H. Demlow, M.D. | 1975-78 |
| Richard L. Dexter, M.D., President-Elect | 1977-78 |
| **L. Rex Ehling, M.D. | 1977-80 |
| Harlan R. Giles, M.D. | 1976-79 |
| *Raymond J. Jennett, M.D. | 1977-80 |
| John F. Kahle, M.D., President | 1977-78 |
| **John V. Kelley, M.D. | 1977-80 |
| Edward Kilgore, M.D. | 1975-78 |
| **Marilyn Laughead, M.D. | 1977-80 |
| Walter K. Lippard, III, M.D. | 1975-78 |
| Derrill B. Manley, M.D., Secretary | 1977-78 |
| H. Belton P. Meyer, M.D. | 1976-79 |
| Sister Alice Montgomery | 1976-79 |
| William J. Moore, M.D. | 1976-79 |
| William G. Payne, M.D. | 1975-78 |
| David Pent, M.D. | 1975-78 |

## MEDICAL ECONOMICS COMMITTEE

| | TERM |
|---|---|
| *Richard W. Switzer, M.D., | 1977-78 |
| Chairman | 1976-79 |
| *Merrill M. Abeshaus, M.D. | 1977-80 |
| Richard S. Armstrong, M.D. | 1975-78 |
| Albert C. Asendorf, M.D. | 1976-79 |
| Chester G. Bennett, M.D. | 1977-80 |
| Sam C. Colachis, M.D. | 1977-80 |
| Charles F. Dalton, M.D. | 1976-79 |
| Richard L. Dexter, M.D., President-Elect | 1977-78 |
| **James E. Emmons, M.D. | 1977-80 |
| **David B. Gilbert, M.D. | 1977-80 |
| David B. Gurland, M.D. | 1977-80 |
| George L. Hoffman, M.D. | 1977-80 |
| Frederick W. Jensen, Jr., M.D. | 1975-78 |
| John F. Kahle, M.D., President | 1977-78 |
| Derrill B. Manley, M.D. Secretary | 1977-78 |
| Patrick P. Moraca, M.D. | 1977-80 |
| Martin L. Weich, M.D. | 1976-79 |
| Reginald J. Zeluff, M.D. | 1975-78 |

## MEDICAL EDUCATION COMMITTEE

| | TERM |
|---|---|
| *Robert E. T. Stark, M.D., | 1977-78 |
| Chairman | 1975-78 |
| James E. Brady, M.D. | 1975-78 |
| **George E. Burdick, M.D. | 1977-80 |
| Daniel B. Carroll, M.D. | 1976-79 |
| Melvin Cohen, M.D. | 1976-79 |
| George D. Comerci, M.D. | 1975-78 |
| **Jack E. Cook, M.D. | 1977-80 |
| David J. Crosby, M.D. | 1976-79 |
| **Clive O. Deutscher, M.D. | 1977-80 |
| Richard L. Dexter, M.D., President-Elect | 1977-78 |
| Kenneth A. Dregseth, M.D. | 1976-79 |
| Francis T. Flood, M.D. | 1975-78 |
| **Willard S. Gold, M.D. | 1977-80 |
| Harvey W. Hale, Jr., M.D. | 1976-79 |
| Robert E. Hastings, M.D. | 1976-79 |
| **W. David Jacoby, M.D. | 1977-80 |
| John F. Kahle, M.D., President | 1977-78 |
| John V. Kelley, M.D. | 1977-80 |
| *Jack M. Layton, M.D. | 1977-80 |
| Derrill B. Manley, M.D., Secretary | 1977-78 |
| Albert Rizzoli, M.D. | 1975-78 |
| William F. Sheely, M.D. | 1977-80 |
| John J. Standifer, M.D. | 1976-79 |
| Lawrence Z. Stern, M.D. | 1975-78 |
| David C. H. Sun, M.D. | 1976-79 |
| Ashton B. Taylor, M.D. | 1975-78 |

## OCCUPATIONAL HEALTH COMMITTEE

| | TERM |
|---|---|
| *Joseph M. Hughes, M.D., | 1977-78 |
| Chairman | 1977-80 |
| Floyd K. Berk, M.D. | 1975-78 |
| Richard Besserman, M.D. | 1975-78 |
| Earl M. Best, M.D. | 1975-78 |
| William F. Briney, M.D. | 1977-80 |
| Sheldon Davidson, M.D. | 1975-78 |
| Richard L. Dexter, M.D., President-Elect | 1977-78 |
| Walter V. Edwards, M.D. | 1976-79 |
| Eugene C. Gibbs, M.D. | 1976-79 |
| Heinz R. Hoenecke, M.D. | 1977-80 |
| John F. Kahle, M.D., President | 1977-78 |
| *Robert B. Leonard, M.D. | 1977-80 |
| Derrill B. Manley, M.D., Secretary | 1977-78 |
| Charles H. Nelson, M.D. | 1976-79 |
| Florian R. Rabe, M.D. | 1976-79 |
| **Melvin I. Roth, M.D. | 1977-80 |
| *Eugene J. Ryan, M.D. | 1977-80 |
| **Irwin Steinberg, M.D. | 1977-80 |

## PHYSICIAN REHABILITATION COMMITTEE

| | TERM |
|---|---|
| **Thomas E. Bittker, M.D., | 1977-78 |
| Chairman | 1977-80 |
| William N. Bauer, M.D. | 1976-79 |
| Harrison G. Butler, M.D. | 1976-79 |
| John T. Clymer, M.D. | 1975-78 |
| Everett W. Czerny, M.D. | 1976-79 |
| Donald L. Damstra, M.D. | 1975-78 |
| Richard L. Dexter, M.D., President-Elect | 1977-78 |
| **Howard S. Gray, M.D. | 1977-80 |
| Wesley E. Green, M.D. | 1976-79 |
| John F. Kahle, M.D. | 1977-78 |
| Laurence M. Linkner, M.D. | 1975-78 |
| Derrill B. Manley, M.D., Secretary | 1977-78 |
| **Edward Meshorer, M.D. | 1977-80 |
| **Sanford H. Roth, M.D. | 1977-80 |
| Stephen C. Scheiber, M.D. | 1976-79 |
| Walter B. Tomlinson, M.D. | 1976-79 |
| *Karl E. Voldeng, M.D. | 1977-80 |
| *Eleanor A. Waskow, M.D. | 1977-80 |
| **Lincoln H. Westman, M.D. | 1977-80 |
| **Louis E. Young, M.D. | 1977-80 |

## PROFESSIONAL COMMITTEE

| | TERM |
|---|---|
| *Joseph W. Hanss, Jr., M.D., | 1977-78 |
| Chairman | 1975-78 |
| *Paul M. Bindelgas, M.D. | 1977-80 |
| William C. Brainard, M.D. | 1975-78 |
| John A. Bruner, M.D. | 1975-78 |
| L. Philip Carter, M.D. | 1975-78 |
| Richard L. Dexter, M.D., President-Elect | 1977-78 |
| **Robert L. Hagan, M.D. | 1977-80 |
| *James M. Hurley, M.D. | 1977-80 |
| Helen Johnson, M.D. | 1976-79 |
| John F. Kahle, M.D., President | 1977-78 |
| **Clyde W. Kurtz, M.D. | 1977-80 |
| James G. Lawson, M.D. | 1976-79 |
| Laurence M. Linkner, M.D. | 1976-79 |
| Derrill B. Manley, M.D., Secretary | 1977-78 |
| Frank Pena, M.D. | 1976-79 |
| Joseph H. Reno, M.D. | 1976-79 |
| **Robert J. Rubenzik, M.D. | 1977-80 |
| Donald F. Schaller, M.D. | 1976-79 |
| George A. Spendlove, M.D. | 1977-80 |
| **Anthony F. Vuturo, M.D. | 1977-80 |

## PUBLIC RELATIONS COMMITTEE

| | TERM |
|---|---|
| **Ira B. Ehrlich, M.D., Chairman | 1977-78 |
| | 1976-79 |
| **Robert B. Armstrong, M.D. | 1977-80 |
| M. David Ben-Asher, M.D. | 1975-78 |

| | |
|---|---|
| *George F. Brown, M.D. | 1977-80 |
| James R. Callison, M.D. | 1976-79 |
| William G. Chaffee, Jr., M.D. | 1976-79 |
| Ronald L. Christ, M.D. | 1975-78 |
| *Stuart B. Cohen, M.D. | 1977-80 |
| John R. Davis, M.D. | 1977-80 |
| Julian DeVries | 1975-78 |
| Richard L. Dexter, M.D., President-Elect | 1977-78 |
| *Stephen L. Dippe, M.D. | 1977-80 |
| Theodore G. Dodenhoff, M.D. | 1976-79 |
| Merlin K. DuVal, M.D. | 1976-79 |
| Charles H. Finney, M.D. | 1976-79 |
| John F. Kahle, M.D., President | 1977-78 |
| Gennaro Licosati, M.D. | 1976-79 |
| *Arnold A. Lilien, M.D. | 1977-80 |
| *Derrill B. Manley, M.D., Secretary | 1977-78 |
| Mrs. Nikki Mertz | 1976-79 |
| Julius Schwimmer, M.D. | 1977-80 |
| Alan Yudell, M.D. | 1976-79 |

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|---|---|
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| John R. Green, M.D. | 1976-79 |
| John F. Kahle, M.D., President | 1977-78 |
| **John W. Kennedy, M.D. | 1977-80 |
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| **William C. Weese, M.D. | 1977-80 |
| Donald J. Ziehm, M.D. | 1976-79 |

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|---|---|
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| Merrill B. Abeshaus, M.D. | 1975-78 |
| Suresh C. Anand, M.D. | 1976-79 |
| **James A. Austin, M.D. | 1977-80 |
| Wayne Beck, M.D. | 1976-79 |
| *Floyd K. Berk, M.D. | 1977-80 |
| Thomas E. Bittker, M.D. | 1976-79 |
| W. Scott Chisholm, M.D. | 1976-79 |
| George D. Comerci, M.D. | 1976-79 |
| William E. Crisp, M.D., Vice President | 1977-78 |
| Boyden L. Crouch, M.D. | 1976-79 |
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| *Otto Gambacorta, M.D. | 1977-80 |
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| Laurence M. Haas, M.D. | 1975-78 |
| Timothy R. Harrington, M.D. | 1975-78 |
| Thomas F. Hartley, M.D. | 1975-78 |
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| Stuart I. Holtzman, M.D. | 1976-79 |
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| *James M. Hurley, M.D. | 1977-80 |
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| Derrill B. Manley, M.D., Secretary | 1977-78 |
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| **M. Herbert Nathan, M.D. | 1977-80 |
| William S. Nevin, M.D. | 1975-78 |
| *Neopito L. Robles, M.D. | 1977-80 |
| Marvin C. Schneider, M.D. | 1976-79 |
| Donald P. Speer, M.D. | 1975-78 |
| **Stephen R. Stein, M.D. | 1977-80 |
| *Luis S. Tan, M.D. | 1977-80 |
| *Wilbur C. Voss, M.D. | 1977-80 |
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ARIZONA HEALTH SERVICE CORPS EXECUTIVE COMMITTEE - AD HOC
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**Louis C. Kossuth, M.D.
**John C. Lingenfelter, M.D.
**Marcus M. Marble, M.D.
**Dermont W. Melick, M.D.
**Andrew W. Nichols, M.D.
**Howard G. Norman, D.O.
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**John J. Standifer, M.D.
**Dale F. Webb, M.D.
**Herbert L. Winograd, M.D.

## 1978 ANNUAL MEETING

**Questionnaire**

It was recommended that a questionnaire be sent to all members to try to determine why the attendance at this year's meeting was so low.

**Financing**

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE SCIENTIFIC ASSEMBLY COMMITTEE THAT THEY SEEK ALTERNATE MEANS OF FINANCING THE ANNUAL MEETING SO THE BASIC REGISTRATION FEES CAN BE REDUCED.

# *Future Medical Meetings*

## CONTINUING MEDICAL EDUCATION

THE FOLLOWING INSTITUTIONS AND ORGANIZATIONS HAVE RECEIVED ACCREDITATION FOR CONTINUING MEDICAL EDUCATION FROM THE COUNCIL ON MEDICAL EDUCATION OF THE AMA

ARIZONA STATE HOSPITAL PHOENIX
DESERT SAMARITAN HOSPITAL MESA
GOOD SAMARITAN HOSPITAL PHOENIX
HEALTH MAINTENANCE ASSOCIATES
PHOENIX INDIAN MEDICAL CENTER
MARICOPA COUNTY GENERAL HOSPITAL PHOENIX
MEMORIAL HOSPITAL PHOENIX
ST LUKE S HOSPITAL AND MEDICAL CENTER PHOENIX
ST JOSEPH S HOSPITAL AND MEDICAL CENTER PHOENIX
TUCSON HOSPITALS MEDICAL EDUCATION PROGRAM TUCSON
U OF A HEALTH SCIENCES CENTER
VETERANS ADMINISTRATION CENTER PRESCOTT
VETERANS ADMINISTRATION HOSPITAL PHOENIX

The accredited institutions and organizations above produce a variety of continuing medical education programs Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category I credit Physicians who participate in programs which are designated Category I by accredited institutions will receive Category I credit toward the ArMA Certificate in CME and the AMA's Physicians Recognition Award

## SEPTEMBER

### COMBINED GRAND ROUNDS

September 7, 1977, St. Joseph's Hospital. Sponsor: Family Practice Residency Programs of St. Joseph's, Good Samaritan, and Scottsdale Memorial Hospitals. Contact: Ann Larsen, R.N., Program Coordinator, Family Practice Residency Program, St. Joseph's Hospital and Medical Center, Phoenix, AZ 85013. Approved for required hours toward the AMA Certificate in Continuing Medical Education.

### MEDICAL HISTORY SOCIETY OF ARIZONA

September 29, 1977. Contact: William C. Weese, M.D., 2910 North Third Street, Phoenix, AZ 85012

## OCTOBER

### DERMATOLOGY

October 1-3, 1977, College of Nursing, U of A., Tucson, AZ Sponsor University of Arizona. Contact John T. Condon Ed D., 1828 E Orange Drive, Phoenix, AZ. Approved for 18 required hours toward the ArMA Certificate in Continuing Medical Education

### 25th ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

October 12-15, 1977, Del Webb's Towne House, Phoenix, AZ. Sponsor Medical Society of the United States and Mexico. Contact. Lucy A. Vernetti, M.D., 333 W Thomas Rd Ste 207, Phoenix, AZ 85013. Approved for required hours toward the ArMA Certificate in Continuing Medical Education

### BASIC SCIENCE REVIEW SEMINARS— "Fluid and Electrolytes"

October 12 & 26 and November 9, 1977 AHSC—Rm. 5403, Tucson, AZ. Sponsor. U. of A College of Medicine. Contact: George D. Comerci, M.D., 1501 N Campbell, Tucson, AZ 85724 Approved for 2-1/2 required hours per session toward the ArMA Certificate in Continuing Medical Education.

### BI-ANNUAL SYMPOSIUM ON INFECTION CONTROL

October 13 & 14, 1977. Sunburst Hotel, Scottsdale, AZ. Sponsor: Association for Infection Control. Approved for 11 required hours toward the ArMA Certificate in Continuing Medical Education.

## NOVEMBER

### PULMONARY DISEASE

November 5 & 6, 1977. Maricopa County General Hospital, Phoenix, AZ 85008. Sponsor: Radiology Department, MCGH. Contact: Alex Newman, M.D., Dept. of Radiology, Maricopa County General Hospital 2601 East Roosevelt, Phoenix, AZ 85008. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### PERINATAL PRESPECTIVE '77

November 7 - 10, 1977, Hyatt Regency Hotel, Phoenix, AZ. Sponsor: Grand Canyon-Saguaro Chapter, March of Dimes. Contact: William J. Daily, M.D. or Mr. James G. Smith, c/o March of Dimes, 316 W. McDowell Rd., Phoenix, AZ. Approved for 40 required hours toward the ArMA Certificate in Continuing Medical Education.

## JANUARY

### PEDIATRIC UPDATE 1978

January 16-19, Doubletree Inn, Scottsdale, AZ. Sponsor Dept of Pediatrics of St. Joseph's Hospital and Medical Center, Phoenix, AZ Contact. Melvin L. Cohen, M.D., Dept. of Pediatric Education, St. Joseph's Hospital and Medical Center, 350 W Thomas Road, Phoenix, AZ 85013. Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education an A.A.F.P. credits.

## FEBRUARY

### AAFP ANNUAL MEETING 1978

February 1-4, 1978. Doubletree Inn, Scottsdale, AZ. Sponsor: Arizona Academy of Family Physicians. Contact: Mrs. June Boykin, 1027½ E. Camelback Rd., Phoenix, AZ 85014. Approved for required hours toward the ArMA Certificate In Continuing Medical Education.

### SOUTHWESTERN SEMINAR ON NEUR MUSCULAR DISORDERS IN CHILDR

February 17-18, 1978. Health Scien
Center, Main Auditorium, Tucson,
Sponsor: U of A Health Sciences Cen
Dept. of Neurology. Contact: Lawrence
Stern, M.D., Dept. of Neurology, U of
Health Sciences Center, Tucson,
85724. Approved for 9 required ho
toward the ArMA Certificate in Continu
Medical Education.

### ARIZONA SOCIETY OF ANESTHESIOL GISTS ANNUAL MEETING

February 25 & 26, 1978. Scottsdale Hilt
Hotel, Scottsdale, AZ. Sponsor: Arizo
Society of Anesthesiologists. Conta
Casey D. Blitt, M.D., Dept. of Anest
siology, U of A Health Sciences Cent
Tucson, AZ 85724. Approved for 9
quired hours toward the ArMA Certific
in Continuing Medical Education.

## MARCH

### VALLEY OF THE SUN DERMATOLOGI SYMPOSIUM

March 2-5, 1978. Casa Blanca Inn, Scot
dale, AZ. Sponsor: Phoenix Dermat
ogical Society, & University of Arizor
Contact: Dr. Fillmore K. Bagatela,
Peter J. Lynch, 333 E. Virginia, Phoen
AZ. Approved for 12 required hou
toward the ArMA Certificate in Continui
Medical Education.

### DAY OF HEMATOLOGY

March 3, 1978, Camelback Inn, Scottsda
AZ. Sponsor: St. Joseph's Hospital and Me
cal Center, Phoenix, AZ. Contact: Ethela
Murray, M.D., St. Joseph's Hospital and Me
cal Center, 350 West Thomas Road, Phoen
AZ 85013. Approved for 6 required hours
ward the ArMA Certificate in Continuu
Medical Education.

### THE SECOND NATIONAL CONFERENCE ON OTITIS MEDIA

March 3-5, 1978, Doubletree Inn, Scottsda
AZ. Sponsor: Univ. of Arizona College
Medicine and the Indian Health Service. Co
tact Office of Continuing Medical Educati
and Outreach, University of Arizona Colle
of Medicine, Tucson, AZ 85724. Approved f
17 5 required hours toward the ArMA Certi
cate in Continuing Medical Education.

## MONTHLY OR WEEKLY

### OFFICE PSYCHIATRY FOR THE PRIMARY PROVIDER

2nd Monday of month, 4811 N 7th Stre
Phoenix, AZ. Sponsor: Arizona Health Pl
Contact T. R. Bittker, M.D., Box 5000, Phoen
AZ 85010. Approved for required hours tow
the ArMA Certificate in Continuing Medi

### READING SESSIONS & ENTIFIC MEETINGS

thly Sponsor Phoenix Radiology Society
act Mrs. Mary Wood, 810 W Bethany
e Rd, Phoenix, AZ 85013 Approved for 2
ired hours per session toward the ArMA
ificate in Continuing Medical Education

### NICAL IMMUNOLOGY, ALLERGY RHEUMATOLOGY ROUNDS

y Friday Noon-1 p.m. Sponsor U of A
ge of Medicine, Dept of Internal Medi-
, Clinical Immunology Section. Contact:
Boyer, M.D., U of A College of Medicine,
on, AZ 85721 Approved for 1 required
per session toward the ArMA Certificate in
inuing Medical Education.

### DOCRINOLOGY SEMINAR

y Thursday, Noon-1 p.m., 1st, 3rd & 5th
rsday—Rm. N318, VA Hospital, 2nd & 4th
rsday, Rm 6505, Tucson Medical Center,
nsor U. of A. College of Medicine, Depart-
t of Internal Medicine, Department of Inter-
Medicine, Tucson, AZ 85721 Approved for
quired hour per session toward the ArMA
ificate in Continuing Medical Education.

### MATOLOGY-ONOCOLOGY NICAL CONFERENCE

ry Tuesday, Noon-1 p.m. 1st, 3rd & 5th
sdays—Rm 6505, AZ Medical Center. 2nd
th Tuesdays—Rm. N318. Veterans Adm.
spital. Sponsor U. of A. College of Medi-
e, Dept of Internal Medicine. Contact Sid-
Salmon, M D., U. of A. College of Medicine,
son, AZ 85721. Approved for 1 required
r per session toward the ArMA Certificate in
ntinuing Medical Education.

### AND WARD ROUNDS—TRAUMA

ry Tuesday, 8 a.m Arizona Medical Center,
son, AZ Sponsor: U. of A College of Medi-
e, Surgery Dept., Trauma Section. Contact.
rtin Silverstein, M.D., U. of A College of
dicine, Tucson, AZ 85721. Approved for 1
uired hour per session toward the ArMA
rtificate in Continuing Medical Education.

### OBLEM CASE WORKSHOPS

Monday of each month 7 30 a.m. Room
10, Arizona Medical Center, Tucson, AZ.
onsor Division of Ophthalmology, U. of A.
llege of Medicine. Contact: H. E. Cross. M.D.,
D., Arizona Medical Center, Dept. of Sur-
ry, Tucson, AZ Approved for 2 required
urs toward the ArMA Certificate in Continu-
Medical Education.

### MEDICAL GRAND ROUNDS

Every Wednesday, Noon-1 p.m 1st, 3rd & 5th Wednesday—Staff Conf. Rm., VA Hospital. 2nd & 4th Wednesday—Rm 5403, Arizona Medical Center. Sponsor U. of A College of Medicine. Dept. of Internal Medicine. Contact Jay Smith, M.D., U of A. College of Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### PSYCHIATRIC GRAND ROUNDS

Every Wed., Sept. to May, 4-5.30 p.m. Rm. 8403, Arizona Medical Center, Tucson, AZ. Sponsor U. of A. College of Medicine Dept. of Psychiatry. Contact Alan Levenson, M.D., U. of A. College of Medicine, Tucson, AZ 85721. Approved for 1-1/2 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### TRAUMA CONFERENCE

Every Monday, 4 p.m Rm. 4410, Arizona Medical Center, Tucson, AZ. Sponsor U. of A. College of Medicine, Dept ol Surgery. Trauma Section. Contact. Martin Silverstein, M.D., U. of A. College of Medicine, Tucson, AZ 85721. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### STAFF EDUCATION CONFERENCE

Wednesdays, Weekly, 1 p.m. Arizona State Hospital, Phoenix, AZ. Sponsor: Arizona State Hospital. Contact: Howard E Wulsin, M.D., Arizona State Hospital, 2500 E. Van Buren, Phoenix, AZ 85008. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### SURGICAL GRAND ROUNDS 4TH TUESDAY OF EACH MONTH

Hospital Auditorium, Baptist Hospital, Phoenix Sponsor: Baptist Hospital Phoenix. Contact: James B. Shields, M.D., 6036 N. 19th Ave., Phoenix, AZ 85015. Approved for 1-1/2 required hours per month toward the ArMA Certificate in Continuing Medical Education.

### PATIENT STAFFING CONFERENCE

Three times weekly. Camelback Hospital Phoenix, AZ. Sponsor: Camelback Hospital. Contact. Medical Director, Camelback Hospital, 5055 N. 34th St., Phoenix, AZ 85018. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### CAMELBACK HOSPITAL CLINICAL CONFERENCE

Third Tuesday monthly. Camelback Hospital, Phoenix, AZ. Sponsor: Camelback Hospital. Contact. Medical Director, Camelback Hospital, 5055 N 34th St., Phoenix, AZ 85018. Approved for 1 elective hour per session toward the ArMA Certificate in Continuing Medical Education.

### COUNTER TRANSFERENCE GROUP

Weekly, Thurs. 8-10 p.m. Sponsor: Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N 34th St., Phoenix, AZ 85018. Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

### DESERT SAMARITAN HOSPITAL

Wednesday Evenings 7 p.m. Sponsor: Desert Samaritan Hospital. Contact. L. A. Rosati, M.D., Laboratory, Desert Samaritan Hospital, Mesa, AZ 85202. Approved for required hours toward the ArMA Certilicate in Continuing Medical Education.

### PULMONARY DISEASE GRAND ROUNDS

Mondays—12 Noon. D-5 North Conference Rm., Good Samaritan Hospital, Phoenix, AZ. Sponsor: Pulmonary Disease Teaching Service, Good Samaritan Hospital. Contact. Bernard E. Levine, M.D., Pulmonary Function Laboratory, Good Samaritan Hospital, 1033 E. McDowell Hospital, Phoenix, AZ 85006. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### CLINICAL CANCER CONFERENCE

3rd Wednesday every month, Butler Bldg Conference Room, Good Samaritan Hospital, Phoenix, AZ. Sponsor: Good Samaritan Hospital. Contact. John A Bruner, M.D., 926 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### TUMOR BOARD CONFERENCE

Every Friday at Noon, Kiva Conference Room, Phoenix Memorial Hospital. Sponsor. Phoenix Memorial Hospital. Contact: Howard Kimball, M.D., 333 West Thomas Road, Phoenix, AZ 85013. Approved for credit toward the ArMA Certificate in Continuing Medical Education.

### MONTHLY MEDICAL EDUCATION SEMINAR

Third Monday of the Month, 6:30 p.m., Kiva Conference Room, Phoenix Memorial Hospital. Sponsor: Medical Staff of Memorial Hospital. Contact George Scharf, M.D., 1201 South 7th Avenue, Phoenix, AZ 85007. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### MONTLHY MEETING OF TUCSON RADIOLOGISTS

Last Tues. of Month, Plaza International, Tucson, AZ. Sponsor. U. of A. Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., Arizona Medical Center, Dept. of Radiology, Tucson, AZ 85724. Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

### FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor: Medical Staff. Contact: R. C. Good, M.D., Dir. of Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### MORBIDITY & MORALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor: Medical Staff. Contact R. C. Good, M.D., Dir. Medical Education, 7300 E 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor: Medical Staff. Contact. R C Good, M.D., Director of Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor: Medical Staff. Contact: R. C. Good, M.D., Dir. of Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### CARDIOLOGY CONFERENCE

Weekly—Friday 8-9 a.m., St. Mary's Hospital Auditorium, Tucson, AZ. Sponsor: St. Mary's Hospital. Contact: A. L. Forte, M.D., St. Mary's Hospital, Tucson, AZ 85724. Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

### GRAND ROUNDS

Each Thursday 7 a.m.-8 a.m., St. Mary's Hospital and Health Center, Sponsor: Depts. of Medicine, Surgery, Radiology, Pathology and Family Practice. Contact. Richard Silver, M.D., Chairman, Medical Education and Library Committee, Century Medical Plaza, Suite 160, 1701 West St. Mary's Road, Tucson, AZ 85703. Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

### GI CONFERENCE

(Special Program with U. of A. Consultants) 4th Friday, 1 p.m., T-5. Sponsor VA Hospital Phoenix. Contact: Jasper L. McPhail, M.D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### G.I.-RADIOLOGY CLINICAL CORRELATION CONFERENCE

1st and 3rd Monday, 1 p.m., C435. Sponsor: VA Hospital, Phoenix, AZ Contact: Jasper L. McPhail, M.D., Veterans Administration Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### GASTROENTEROLOGY CONFERENCE

1st and 3rd Tuesday, 1 p.m., T-5. Sponsor: VA Hospital Phoenix, Contact: Jasper L. McPhail, M.D. VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### CARDIOLOGY CONFERENCE

2nd Thursday, 1 p.m., T-5. Sponsor: VA Hospital Phoenix. Contact: Jasper L. McPhail, M.D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### CLINICOPATHOLOGY CONFERENCE

4th Thursday of 3rd Mo. (Mar., June., Sept. & Dec.), 1 p.m., T-5. Sponsor: VA Hospital Phoenix. Contact: Jasper L. McPhail, M.D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Education.

### MEDICAL-SURGICAL CHEST CONFERENCE

1st and 3rd Thursday, 1 p.m., T-5. Sponsor VA Hospital Phoenix. Contact: Jasper L. McPhail, M.D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### CANCER SYMPOSIUM (fomerly Tumor Board)

Each Wednesday, 1 p.m., T-5 Sponsor V Hospital Phoenix Contact: Jasper L. McPhai M.D., VA Hospital, 7th & Indian School Rd Phoenix, AZ. Approved for required hour toward the ArMA Certificate in Continuin Medical Education.

### SURGERY-PATHOLOGY CONFERENCE

Each Thursday, 7 a.m., 2128. Sponsor: V Hospital Phoenix. Contact. Jasper L McPhai M.D., VA Hospital, 7th & Indian School Rd Phoenix, AZ. Approved for required hour toward the ArMA Certificate in Continuin Medical Education.

### DERMATOLOGY CONFERENCE

1st, 2nd & 3rd Wednesday Sponsor VA Hospital Phoenix. Contact: Jasper L. McPhail, M.D VA Hospital, 7th & Indian School Rd., Phoenix AZ. Approved for required hours toward th ArMA Certificate in Continuing Medical Education.

### MEDICAL SERVICE GRAND ROUNDS

Each Friday, 11 a.m., T-5. Sponsor: VA Hospita Phoenix. Contact. Jasper L. McPhail, M.D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### HEPATOLOGY CONFERENCE

2nd and 4th Tuesday, 1 p.m., 2128. Sponsor VA Hospital Phoenix. Contact: Jasper L. McPhail, M.D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### UROLOGY-PATHOLOGY CONFERENCE

Each Wednesday, 7 a.m., 2128. Sponsor: VA Hospital Phoenix. Contact: Jasper L. McPhail, M.D., VA Hospital, 7th and Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

# How much is "too much" milk?

Milk, like many foods today, is being looked at much more closely than ever before by physicians and nutritionists.

And well it should be.

Because we recognize that too much milk, like too much of any one food, can fill a child up and consequently, can keep him from eating other foods he needs. Particularly, iron-rich foods.

But let's also make sure children get enough milk. Because milk supplies more essential nutrients per calorie than most other foods.

A child between the ages of six months and six years, for example, can get at least three-fourths of his daily dietary allowance for calcium, riboflavin, vitamins D and $B_{12}$, phosphorous, and protein from just three glasses of milk. And milk is also a good source of vitamins A and $B_6$, as well as thiamin and niacin.

That's why the U.S.D.A., acting on the recommendation of the National Research Council—National Academy of Sciences, has established these guidelines for milk consumption:

| **Children up to 6 years** | **Children 6 to 12 years** |
|---|---|
| Two to three 8 oz. glasses per day. | Three or more 8 oz. glasses per day. |

For a free copy of the Dairy Council Digest issue titled, "Composition and Nutrient Value of Dairy Foods," contact Dairy Council of Arizona: 2008 South Hardy Drive, Tempe, Arizona 85282, Phone: 968-7814; or 4625 E. Ft. Lowell Road, #107, Tucson, Arizona 85712, Phone: 795-5759.

**Per cent of Recommended Daily Allowance contributed by three 8 oz. glasses of fortified milk.**

| | 6 mos.—1 yr. | 1 yr.—3 yrs. | 3 yrs.—6 yrs. |
|---|---|---|---|
| Calcium | 100% | 100% | 100% |
| Riboflavin | 100 | 100 | 100 |
| Vitamin $B_{12}$ | 100 | 100 | 100 |
| Protein | 100 | 100 | 80 |
| Phosphorus | 100 | 85 | 85 |
| Vitamin $B_6$ | 76 | 51 | 34 |
| Vitamin D | 75 | 75 | 75 |
| Niacin* | 71 | 63 | 47 |
| Thiamin | 56 | 40 | 31 |
| Vitamin A | 46 | 46 | 37 |

*maximum niacin equivalents based on: 60 mg tryptophan=1 mg niacin

**DAIRY COUNCIL OF ARIZONA**

**Milk. Sometimes we forget all the good things it does.**

280
240
220
200
100
80
250
230
210
190
170
150
130
110
90
70
50
30

# When choosing a diuretic for day-in-day-out hypertension control with comfortable compliance...

The agent you choose in mild to moderate essential hypertension should offer (1) long-term effectiveness, (2) patient comfort and compliance.

**Zaroxolyn offers both.**

In one long-term study[1] Zaroxolyn brought moderately elevated (average 161/109 mm Hg) blood pressure down to the range of normotension—and held it there for a year or more.

The investigator noted, "Patient cooperation was surprisingly good for a study of such duration [2½ years]. The once-daily dosage schedule with metolazone [Zaroxolyn] no doubt contributed to patient compliance."

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**References:**

1 Dornfeld L, Kane R. Metolazone in essential hypertension The long-term clinical efficacy of a new diuretic *Curr Ther Res* **18**: 527-533, 1975
2 Data on file, Medical Department, Pennwalt Prescription Products

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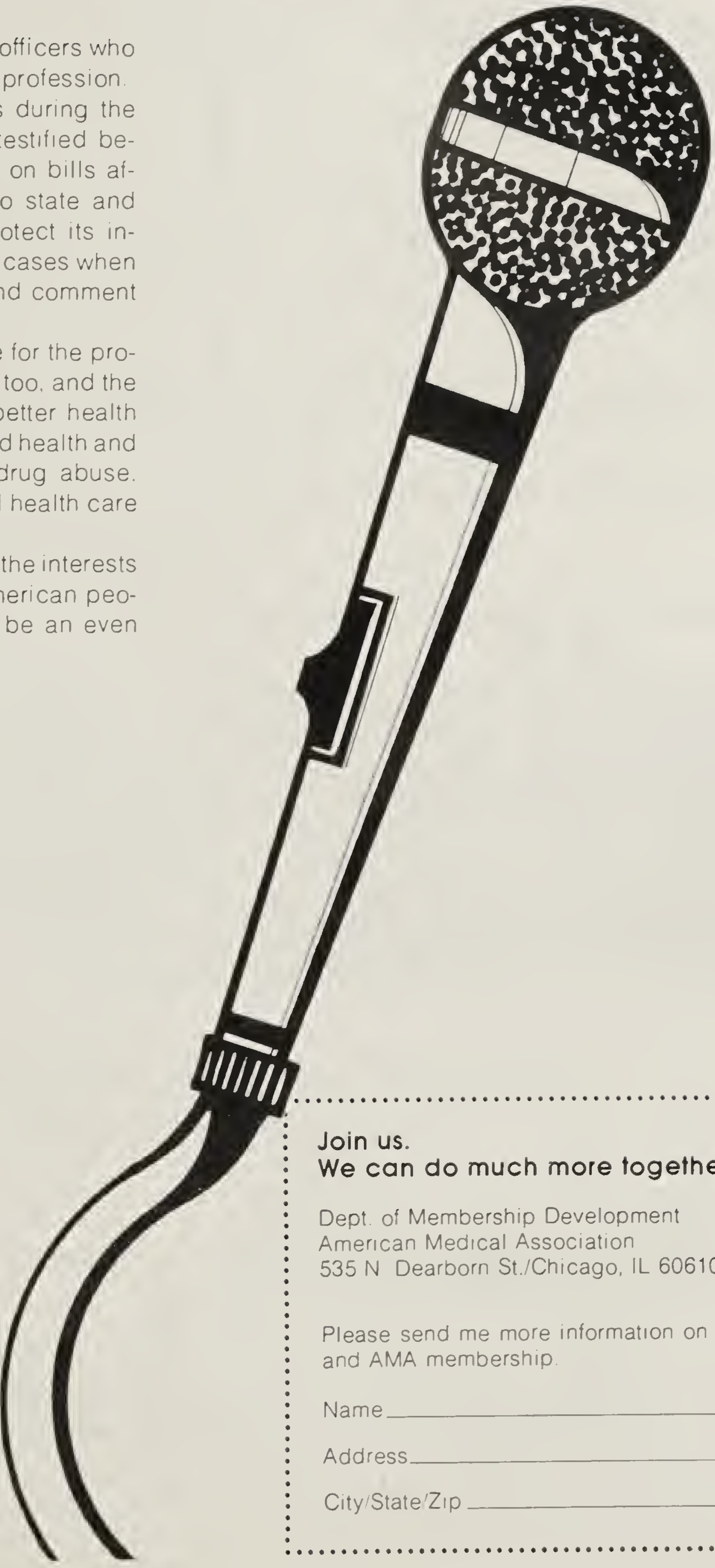

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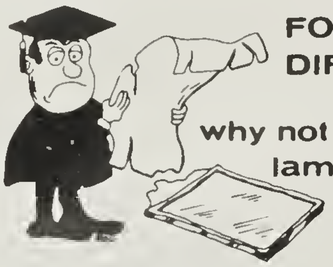

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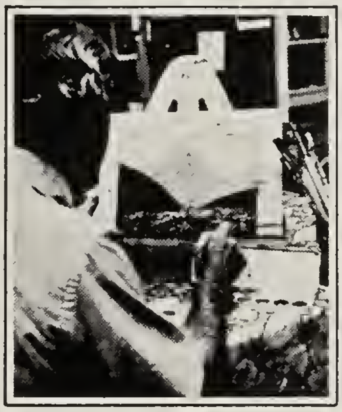

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***Usage in Pregnancy:* Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

**Precautions:** In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

**Adverse Reactions:** Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

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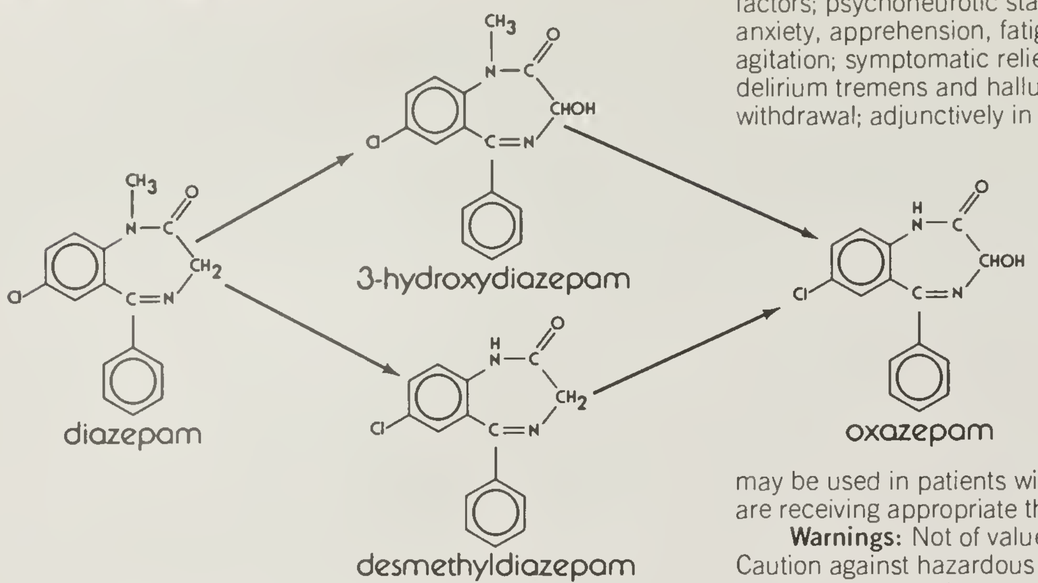

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**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

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***Usage in Pregnancy:*** **Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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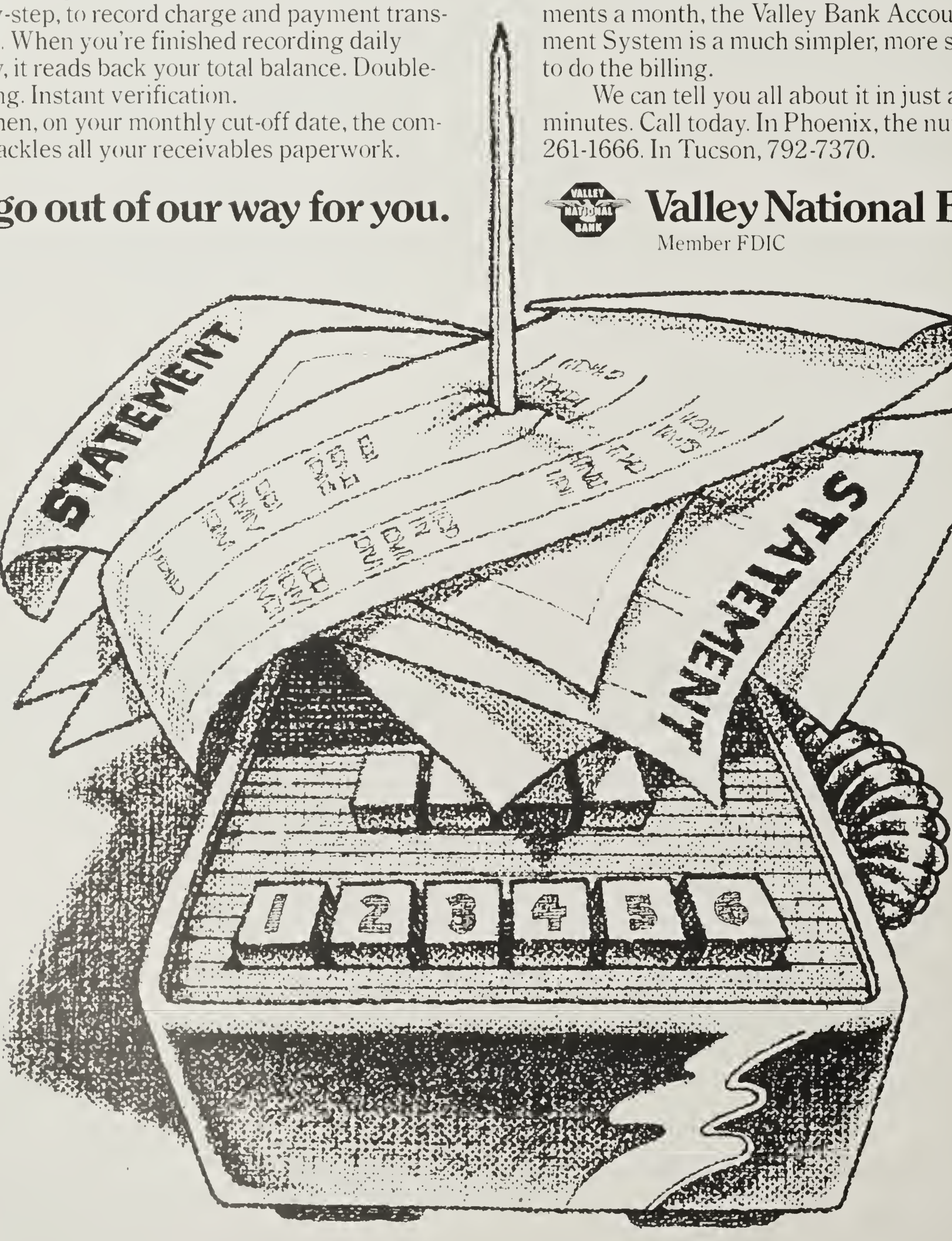

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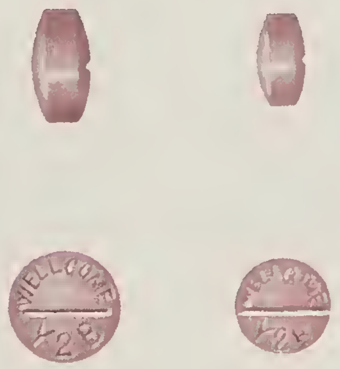

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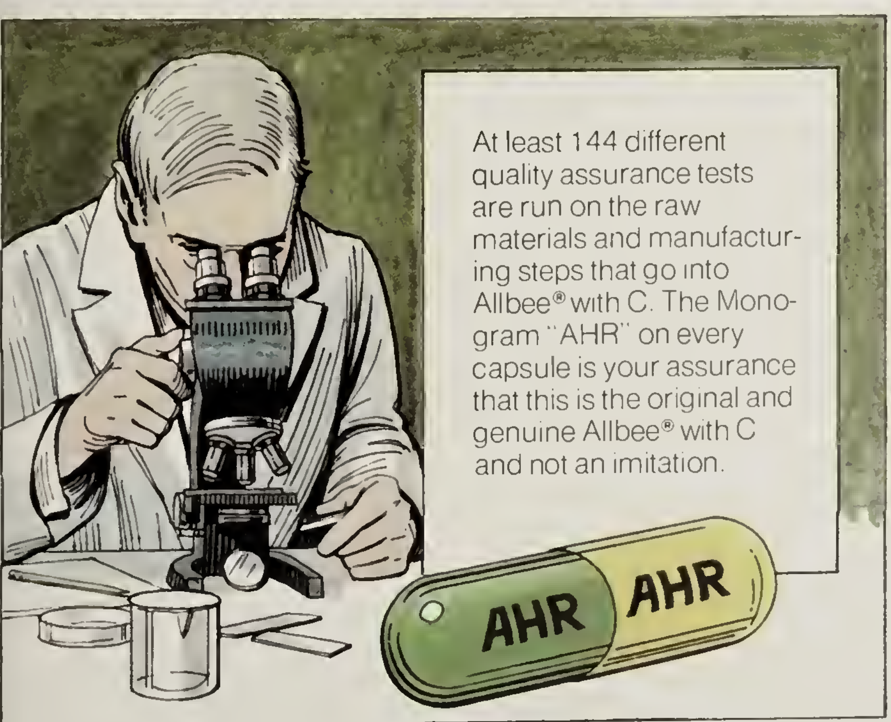

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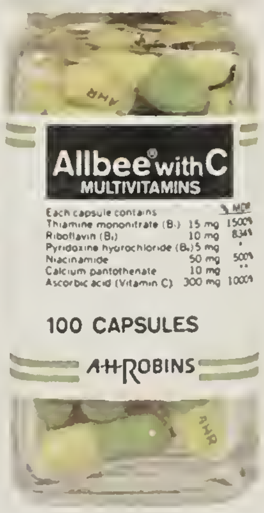
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| Riboflavin | 100 | 100 | 100 |
| Vitamin $B_{12}$ | 100 | 100 | 100 |
| Protein | 100 | 100 | 80 |
| Phosphorus | 100 | 85 | 85 |
| Vitamin $B_6$ | 76 | 51 | 34 |
| Vitamin D | 75 | 75 | 75 |
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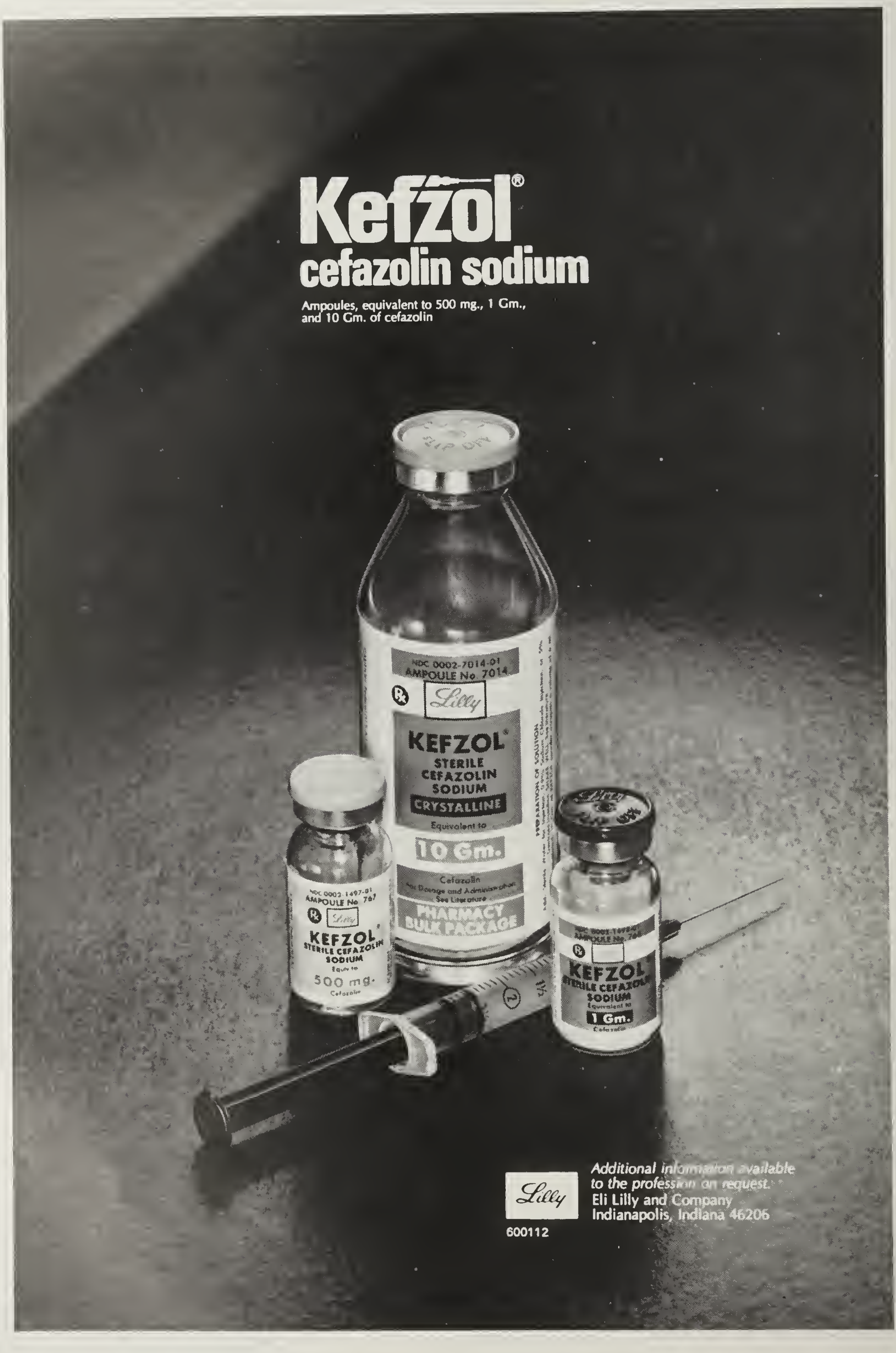

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*Cardiology*

# Historical Overview Of Hypertension Among American Indians And Alaskan Natives

Maurice L. Sievers, M.D.

There is evidence that many American Indian tribes had lower rates of hypertension in the first half of this century than in recent times. Factors influencing this phenomenon are unknown, but data are adduced which indicates that diabetes mellitus, off-reservation lifestyle, and introduction of non-Indian heritage are contributing. Further study may aid elucidation of the relative importance of genetics, metabolic errors, and environmental factors in the genesis of hypertension.

## Introduction

Evidence suggests that major differences probably exist among various Indian tribes in regard to cardiovascular diseases, as has been noted for many other conditions.[1] For example, several congenital diseases, including cardiovascular abnormalities, are much more prevalent in the Athapascans (the Navajos and Apaches) than among other southwestern tribes.[1] Therefore, it would be meaningless to consider the frequency of hypertension among Indians, in **general** — that is, for all tribes, living on- and off-reservation, and with varying extent of Indian heritage.

However, the overall Indian Health Service (IHS) data, for 1971, revealed an age-adjusted death rate for hypertension among the Indians and Alaska Natives which was only 10% lower than the U.S. white rate.[2] No comprehensive prevalence data exists for hypertension among the Native Americans, although fragmentary bits of information have been published. Some investigations had only a few selected subjects, and most did not require multiple blood pressure determinations before categorizing a patient as having hypertension. This presentation discusses the published findings about high blood pressure and its consequences among American Indians and Alaska Natives and, also, provides some personal opinions on the validity of the observations.

## Early Information

Reports of Indian disease patterns in the first four decades of this century generally did not mention the

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From: The Phoenix Indian Medical Center 4212 N. 16th Street, Phoenix, AZ 85016; Dr. Sievers, Senior Clinician, Internal Medicine and Clinical Research. Presented at the National Conference on High Blood Pressure Control in Native American Communities, Arlington, VA, April 21, 1977. The opinions expressed in this paper are those of the author and do not necessarily reflect the views of the Indian Health Service.

frequency of hypertension.[3,4] Possibly, this omission of conclusions may be attributed to an absence of routine blood pressure determinations. The lack of statements on hypertension, however, even in articles giving only broad opinions, suggests that high blood pressure was not a major problem. Indeed, Salsbury[5] reported that, on the Navajo Reservation, from 1931 to 1935 hypertension was the basis for less than 0.1% of hospital admissions. The end results of stroke and congestive heart failure were seldom noted. During the first half of this century, before effective hypertension therapy was available, congestive heart failure in Indians was attributable to valvular or congenital heart disease in the vast majority of cases. Smith,[6] in a study of deaths for 1948 to 1952, concluded that the Navajos had less than one-fourth the rate of hypertension for whites.

In 1953, Cohen[7] stated that, during the preceding 2-year period, 11 of the 801 adult Indian admissions to the Phoenix Indian Medical Center had primary hypertension (a rate of about 1.4%). All but one of these 11 had significant symptoms or signs — headaches 7, congestive heart failure 6, stroke 2, and hypertensive encephalopathy 1. Doubtless, these **symptomatic inpatients** were not the only southwestern Indians with high blood pressure. Four of the 11 hypertensives had diabetes mellitus with probable diabetic nephropathy. During the observation period, two of the 11 died in intractable heart failure, and one died after a stroke.

Subsequently, in a hospital study of diabetes mellitus among Indians of the Southwest, Cohen[8] noted that the most common complications, in rank order, were diabetic nephropathy, pyelonephritis, retinitis, hypertension, and congestive heart failure. He did not specify how often high blood pressure occurred in diabetic Indians without nephropathy, but subsequent evidence established that such a combination is common. Prosnitz and Mandell[9] reported in 1967 that 35 of 101 diabetic Navajo and Hopi Indians had hypertension, most without apparent renal disease. Only one of those 101 diabetics was said to have coronary heart disease.

In a survey of the diagnoses of all Phoenix IHS Area outpatient clinic visits for 1952 and 1953 (15,441 Indians with one or more visits, 58% of the population), Kraus[10] noted hypertension morbidity rates of 7 per 1,000 for Papagos, 4 per 1,000 for Pimas, and 2 per 1,000 for Apaches, as compared to a reported rate of 25 per 1,000 for whites **of all ages**. It should be emphasized that these morbidity rates primarily are derived from **symptomatic patients** with hypertension.

**Later Reports**

During 1958, Leo and associates[11] determined casual blood pressure in ambulatory White Mountain Apaches (110 men and 110 women). Diastolic pressure exceeded 95 mm Hg in 34% of men and 29% of women. A somewhat lower rate of hypertension was recorded in 1963 by Clifford and others,[12] from evaluation of 327 Apaches (≥160/95, men 26.4% women 23.2%). Interpretation of both studies is limited because of selection bias and absence o confirmatory testing of blood pressure. Nonetheless the results suggested that hypertension might be fairly prevalent in White Mountain Apaches.

In my 10-year study (1957-1966) of myocardia infarction (MI) among southwestern tribes of the Phoenix IHS Area,[13] the diagnosis of MI was established for 138 Indians, two-thirds of whom were diabetic and two-fifths of whom were hypertensive Fulmer and Roberts,[14] in 1963, reported observations among Navajos 30 years of age or older, at Many Farms, Arizona. Of the 210 men evaluated, 13 (6.2% were hypertensive; and among the 236 women studied 8 (3.4%) had hypertension. In most instances, only one routine blood pressure determination was recorded, without standardization by arm or position

Shore et al,[15] in 1970, found hypertension among only one of 200 adults in a Northwest Coastal Indian Village. Scott et al[16] surveyed 842 Eskimo men between ages 17 and 53, during 1958, and noted hypertension (mean blood pressure ≥125 mm Hg among 22 (2.6%). The Eskimo blood pressure value were considered similar to results for large series o U.S. men (predominantly white). In 1970, Arthaud[17] reported autopsy findings for 176 Alaskan Native (116 Eskimo/Aleut, and 60 Indians; 8.7% of deaths 1959-1968). He noted cerebral infarcts in 9; berry aneurysm, 4; myocardial infarction, 4; abdomina aortic aneurysm, 2; and generalized atheroscleroti cardiovascular disease 2. Diabetes mellitus was no present in any of the atherosclerotic cases, suggesting other contributory causes (such as hypertension).

By contrast to the Alaskan Natives, the southwestern Indian tribes have generally high rates o diabetes.[1] In Reichenbach's 1967 report of autopsy findings among 217 adult southwestern Indians,[18] about half of the 16 myocardial infarcts and nearly one-third of the cerebral infarcts occurred in diabetics Hypertension was not discussed, but the severity o coronary atherosclerosis in the southwestern Indian was much less than in the general population.

Mayberry and Lindemann[19] evaluated death certificate reports for 1950-1959, among the Seminol Indians 25 years or older, and compared the result with the findings for whites in Seminole County Oklahoma. The rate of coronary artery disease wa somewhat less in Seminoles than in whites, even whe age-corrected; but stroke and hypertension rates wer slightly higher for the Indian men than for the whit men. The authors also compiled death certificate dat for many other Oklahoma tribes (Cherokee, Cheyenne Arapaho, Caddo, Wichita, Commanche, Kiowa Apache, Deleware, Seneca, Creek, Ponca, Oto Missouri, Kaw, Tonkawa, Choctaw, Osage, Quapaw hawnee, Pottawatomie, and Kickapoo), and found ide variation among tribes in death rates for pronary artery disease and other cardiovascular isease. The Cherokee Indians had the **lowest** reported eath rate for coronary artery disease but the **highest** tes from stroke and hypertension.

In a survey of 302 nonreservation Oklahoma eminoles, 221 Seminoles living on their Florida eservation, and 422 whites, Mayberry and Lindeann[19] found similar mean blood pressure, serum nolesterol levels, and dietary habits for the Oklahoma nd Florida Indians and the white subjects. There was greater frequency of diabetes in the Indians but a omewhat lower rate of coronary artery disease than in ne whites. Coronary artery disease, however, was nuch more frequent among the Seminoles in Oklaoma than the reported rates for Arizona Indians.[15, 16]

In a retrospective 14-year (1956-1969) chart review f Crow and Northern Cheyenne Indians (≥1/4 lood), Pinkerton and Badke[20] concluded that myoardial infarction was slightly less common in Crow nen and much less frequent in Cheyenne men than in ne whites[21]; women of both tribes approximated the hite rates of the Framingham study.[21] They noted nat hypertension and cigarette smoking seemed to be ncommon in the Crow and Northern Cheyenne ndians, although diabetes and obesity were prevaent, especially in the Indian women. The authors ostulated that increased levels of carbon monoxide om defective hydrocarbon-fired heating units in the ndian homes might contribute significantly to the levated levels of coronary heart disease in Crow and heyenne women.

### ecent Data

Dean[22] recently compared some health problems mong white and Sioux Indian patients over age 50 ears at a South Dakota community hospital. He tudied 50 consecutive admissions for each group. here were five diabetics among the whites but 25 in he Sioux, almost all of whom were markedly verweight. The average blood pressure for the two roups was similar. Hypertension (≥160 systolic r≥95 diastolic) was present in 17 whites and 15 ioux.

Utilizing a computerized health information system, trotz and Shorr[23] evaluated blood pressure results ecorded **once** or more for 4,440 Papago Indians age 15 ears or older, between 1969-1972. The findings uggested that almost 20% of Papago adults had ypertension (≥160 systolic or ≥95 diastolic). The igh prevalence rate in this report must be interpreted vith caution, however, because nonstandardized outine blood pressure measurements were evaluated luring clinical encounters. Furthermore, the number onsidered hypertensive was probably enhanced beause, first, Indians who, during the study period, had nly **one** recorded blood pressure determination which vas elevated (without regard for clinical circumstances) were classified as hypertensive; second, Indians who had more than one evaluation were considered hypertensive if two or more blood pressure readings were elevated, regardless of whether subsequent determinations were normal or high; and, third, all diagnoses of hypertension previously recorded by physicians were accepted, even if the blood pressure was consistently within the normal range throughout the study period. The proportion of hypertension was about 43% for the diabetics but only 15% for nondiabetics. Congestive heart failure, cerebrovascular disease, or renal disease occurred in 15% of the hypertensive diabetics, 9.5% of hypertensive nondiabetics, 7.1% of normotensive diabetics and 1.6% of normotensive nondiabetics.

A recent study of Pima Indians by Ingelfinger et al[24] also revealed higher blood pressure for diabetics than for nondiabetics, at all ages and for each sex. Compared with whites, the Pima Indians had lower mean diastolic blood pressure overall, and the nondiabetics also had lower mean systolic blood pressure.[25]

In 1970, Alfred[26] reported that Navajo male migrants to an urban environment had higher mean blood pressure levels than the on-reservation males, although the reservation Indian men were somewhat older than the migrants. Furthermore, the blood pressure levels were higher in the migrants at a period after migration than the measurements while they were living on-reservation. He concluded that the stress of urban migration may increase the blood pressure of Navajo men. However, the length of stay in an urban environment had no correlation with blood pressure levels.

At present, Mattingly is compiling blood pressure data for urban Indians and Alaskan Natives living in the vicinity of Seattle (Mattingly PH, personal communication, 1977). When sufficient information is available, his findings can be compared with results for Native Americans living in traditional areas and lifestyles. Comparisons of blood pressure determinations in the Seattle evaluation will also be of interest for tribal groups and various categories based on factors such as age, sex, and length of urban residence.

### Conclusions

More longitudinal data are needed to determine whether the frequency of high blood pressure is increasing in various Indian tribes. Some pertinent evaluations might include a study of changes in lifestyles and dietary patterns; various comparisons between urban and reservation Indians and for full and partial heritage Indians; and determination of the frequency and extent of Indian morbidity related to elevated blood pressure. If factors contributing to increasing rates of hypertension in the Native Americans can be identified preventive efforts should be considered.

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AM *Seminars in Endocrinology and Metabolism*

# A Path Through the Confusion of Thyroid Testing

Don Hassemer, M.D.

Stephen E. Dippe, M.D., FACP

Editors:
Stephen E. Dippe, M.D.
Jerome Targovnik, M.D.

Any physician worth his iodized salt recognizes that there is a confusing array of tests which assess thyroid function, some with misleading or confusing terminology.[1] Categories of tests include direct determination of thyroid activity, measurement of thyroid hormones, concentrations and binding in blood, assessment of impact of thyroid hormones at the tissue level, and assessment of hormone regulation. The purpose of this brief summary is to review some recent observations so the physician may make rational judgements in selection and interpretation of the available data.

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From: 7331 East Osborn Dr. Ste. 300, Scottsdale, AZ 85251 (Dr. Dippe). Good Samaritan Hospital, 1033 E. McDowell Rd., Phoenix, AZ 85006 (Dr. Hassemer, Resident, Family Practice Program.)

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*Usage in Pregnancy:* See "Contraindications."

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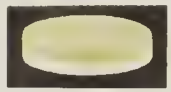

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hypothyroidism, or iodine overabundance). RAIU is useful for diagnosing factitious hyper-thyroidism secondary to ingested thyroid hormone or for evaluation prior to thyroid supression.

### Thyroid Hormone Concentrations in Blood

Direct measurements of all the thyroid hormones in blood are available. Tetraiodothyronine (T4) is the major hormone secreted by the thyroid gland and is peripherally monodeiodinated to hormonally active triiodothyronine (T3). Both are bound to serum proteins, principally thyroid binding globulin (TBG). Levels of unbound or free T4 would be ideal but its concentrations is less than 0.05% of total T4, making measurement difficult. Changes in total T4 concentration may reflect changes in available binding sites rather than in hormone production or loss. Peripheral conversion of T4 to T3 in hypothyroid states is significantly slower than in euthyroidism and reverts to normal with T4 replacement.[2] DeRubertis showed that during viral infection, T4 disposal rates increased.[3]

Normal values of T3 measured by radioimmunoassay (T3 RIA) vary considerably and factors which increase or decrease T4 binding act similarly on T3. Significantly decreased T3 RIA levels exist in various chronic disease states (advancing age, caloric restriction, hepatic disease, malignancy, postsurgically, renal failure, anorexia nervosa, cystic fibrosis, and exogenous glucocorticoid administration).[4] T3 RIA may be also low in alterations in protein binding or in decreased peripheral conversion states and, therefore, the diagnosis of hypothyroidism using T3 RIA may be misleading, and measurement of TSH concentration must be done to confirm suspected hypothyroidism.

Increased T3, with or without increased T4, has been clinically recognized.[5,6] (Shalet showed that 30% of 80 patients were proven hyperthyroid by T3 elevations only.[7] T3 RIA is most useful in suspected hyperthyroidism with normal screening tests and in early compensated gland failure where T4 is low but a normal T3 RIA renders the patient euthyroid.

### Hormone Binding Measurements

T3 resin uptake (T3 RU) is one method of estimating unsaturated sites on the TBG molecule, a misleading term because it does not refer directly or indirectly to levels of T3. Labelled T3 and a binding resin are added to a patient's sera and the amount of T3 bound to the **resin** is measured. In those patients with low total T4 (highly unsaturated TBG). T3 RU will be low. Highly saturated TBG will result in high T3 RU. Mathematical relations of the total T4 and T3 RU have been worked out (free thyroxine index, T7, estimated thyroid ratio) and have shown up to 90% linear correlation with free T4.[8]

In situations where total TBG is increased (pregnancy, estrogen replacement, oral contraceptives, hepatitis, and genetic predetermination), single measurements of T4 (increased) or T3 RU (decreased) will be misleading, whereas the free thyroxine index (ETR, T7) closely approximates true free T4 levels. Likewise, androgens, glucocorticoids, acromegaly, nephrosis, chronic illness, or genetic predetermination may decrease TBG and increase T3 RU. Dilantin, by hepatic enzyme induction, decreases both T4 and free T4.

### Assessment of Thyroid Hormone Regulation

Increased thyroid stimulating hormone (TSH) is by far the most sensitive indicator of hypothyroidism, especially in the patient with low or borderline T4 or T7 or the symptomatic patient on replacement. The occasional patient with anterior pituitary failure or the rare patient with hypothalamic failure will have low or absent TSH. TSH measurements in hyperthyroidism are not useful because they do not distinguish between low and normal values. Hypothyroidism and subsequent cardiovascular complications in patients on replacement after thyroid surgery or oblation are avoided by keeping TSH or T7 in the normal range.

Screening for hypothyroidism in neonates has recently received attention. Two recent reports have indicated that TSH measurements from blood spots on filter paper are probably not useful for neonatal hypothyroid screening.[9,10]

Suppressing the patient's secretion of TSH by exogenous administration of T3 is another method of evaluation for hyperthyroidism. Decreased RAIU is the most commonly used index of suppression following administration. Supression to less than one-half basal values virtually rules out hyperthyroidism. Lack of suppression occurs in endogenous hyperthyroidism and in the autonomously functioning nodules. In thyrotoxicosis, the differential between toxic multinodular goiter, Graves' disease and a hyperfunctioning adenoma cannot be made. In mild hyperthyroidism, abnormal suppression almost always signifies Graves' disease. Administration of thyroid hormones in pharmacological doses is very dangerous, and older patients or those with heart disease should not undergo this test.

The thyrotropin releasing hormone (TRH) stimulation test has received attention.[11] TRH is a tripeptide released by the hypothalamus in response to falling levels of T3 or T4. It acts on the thyrotrophic cells of the anterior pituitary and perhaps prolactin secreting cells. The test is performed by administration of 200-500 mg. TRF (lepremons, Abbott) and measuring TSH levels in 20-60 minutes. If TSH responsiveness to TRH is suppressed, then the patient is hyperthyroid, has ingested exogenous hormone, or has secondary hypothyroidism. Patel and Bruger[12] showed that (1) normal or accelerated elevation in TSH responsiveness occur in patients with either hypopituitary or hypothalamic hypothyroidism, and that (2) TSH reserve is usually normal in both hypopituitary and hypothalamic hypothyroidism and, therefore, a

TRF stimulating test cannot distinguish between the two. The TRH suppression test is useful in the very rare hyperthyroid patient whose diagnosis is in doubt after other tests including T3 RIA are inconclusive, or in the 50% of hypopituitary patients who do not respond to TRF.

Two other tests commonly used in evaluation of the thyroid gland are serum cholesterol and external scintiscanning. Although affected by age, sex, and diet, increased cholesterol concentration is almost always seen in primary hypothyroidism, and, therefore this measurement is useful as both a secondary diagnostic aid and in following response to thyroid medication. In hyperthyroid states the test is of no value. The thyroid scan is used to estimate overall thyroid size, to define areas greater than one centimeter in size of decreased or increased activity, and to define areas of ectopic thyroid, either normal or metastatic.

In summary, screening for thyroid disease should consist of serum T4, T3 resin uptake, and one of the free thyroid indices available (T7, FTI, ETR). Suspicion of hypothyroidism should prompt TSH measurement which is easily available and inexpensive. Radioiodine uptake should probably be used only for following those patients on replacement or antithyroid medication. T3 RIA is useful in the rare patient with early or suspected subclinical thyrotoxicosis, and the TRH suppression test is not useful in differentiating between secondary or tertiary hypothyroidism, but may be useful in hyperthyroidism if the T3 suppression test cannot be done.

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*Emotional Disorders*

# As A Man Thinketh

William B. McGrath, M.D.

Wisdom is the intelligent use of knowledge. Almos all of our knowledge is embodied in language. Does not follow that the intelligent use of language is th very heart of wisdom?

Trumpet that statement: The intelligent use language is the very heart of wisdom!

Now the antonym or opposite of wisdom i foolishness. (I am aware that these are either-c propositions, but they are necessary for succinctness Inverting our earlier syllogism: Most foolishnes derives from the unintelligent use of language. An herein lurks the primary cancer in mental illness.

Yet the use or misuse of language, in and of itsel has rarely been recognized or taken into analyti consideration. On the contrary, one views with disma a proliferation of articles on stress syndromes, o behavioral sciences, on emotional disorders, on variou kindergarten theories and practices in psychiatry.

**Stress.** It has been known for at least two thousan years that tension, in excess or too unremitting adversely affects all physiological structures an functions. The general physician treats the results.

To consider that environmental pressures are th cause of stress disorders is foolishness. It entirel omits the determining factor: The wording (thinking with which the individual has been shaping hi environment. On careful examination most stres proves to be exaggerated or unreal.

The body reacts far less to the outside world than t what the mind is saying about it. It is the wording, " just hate my job," and not the job itself which arouse the physiological responses of disgust or fight c flight. The executive who complains, "These respons bilities are killing me," may well be uttering self-fulfilling prophecy. A better perspective or mor philisophic attitude will be available to him only b way of thinking, the intelligent use of language.

Such would be primary wisdom, and it would b effective in prevention or treatment. Would it nc seem foolish to suppose that a game of volley ball c tennis could relieve tensions which are actuall originating in his verbal ruminations?

**Behavior.** The same fallacy can be recognized i most theories and practices of behavior modificatior There will be no change in conduct until there is change in the thinking (inner language) which pilot

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nd controls it. If one says to one's self that the eighborhood is hostile — whether it really is hostile r just seems so — one's emotional and behavioral eactions will be defensive or aggressive.

**Emotions.** As long as the provocation is proportionte, anger or rage cannot and should not be reduced.

If, however, there is little or no rational basis for the motion then it can be lessened only by clearer hinking. To feel rage and then to attack the wrong bject (a pillow, a wall, a golf ball) would be foolish nd hysterical. As in the neuroses, mechanisms of onversion or displacement are futile.

Suppose the anger dates back to earlier experiences. hen, like out-dated hunger, it cannot today be vented r satisfied. It can only be remembered and hruggingly acknowledged.

Suppose the sources of resentment are present and ontinuing and quite real, but the situation makes it nwise or practically impossible to act out or otherise express the emotion. An example would be the latively ill-equipped or inadequate young mother hose husband is abusive or unfaithful. Because of the hildren she is in no position to fight back or run way. Comparably miserable imprisonments are by no eans uncommon. So, how does one deal with the active emotions?

Emphasis: Emotions do not have to be externalized, eleased by destructive or escapist behavior. Neither o they have to be internalized, seeking neurotic xpression or resolution. This is hard to realize, hard accept — but so are many aspects of the human ndition.

All that one can do to contain one's sanity in such rcumstances is to keep all normal emotions accessle to consciousness. By remaining aware of feelings hich are unavoidable or inescapable one will prevent heir accumulation or their fermenting toward neurotic reakdown or psychosis. Emotions, including any esires, are totally innocent. Only behavior may be raiseworthy or culpable (or both or neither).

To keep intact the descending ladder from intellience to emotions to behavior requires clear thinking; e., the honest use of language. One thinks in linear rrangements of words, silently or aloud. And one's nguage shapes to an unrecognized but all important egree his perception of the environment, his personal ality. If a man says that the Grand Canyon is an gly gash in the landscape, then so far as he is ncerned it becomes an ugly gash.

Behavior disorders result from failure to think, ilure to foresee consequences, failure to take others to consideration. Men who have committed incest e asked what lasting effects the sin will have on their aughters. They almost invariably reply: "I haven't iven it much thought."

Neuroses and psychosomatic disorders commonly egin with faulty thinking, with foolish or dishonest se of language.

Identification (the "is" of identity): The person who says, "I am a homosexual" or "I am an alcoholic" is copping out. The implication is that heredity or early conditions over which he had no control made him what he "is" (does), and he can't help it. He is also foreclosing any effective therapy. The same but sillier cop-out can be recognized in people who "believe in" astrology: "Virgos are just that way." Identifying, the patient says: "I hate you because you remind me of my father." Another patient had an affair long ago, "but by definition I am an adulterer."

Either-or fallacies: "Have you been saved?" "If I am not a success then I am a failure." Psychiatrists unwittingly cultivate this fallacy. "How did you feel toward your mother when you were growing up?" Or witness the "yes" or "no" forms of questionnaires and "profiles." We ask ourselves and are often asked, "Is this disorder organic or functional?"Lawyers too: The client is either sane or insane, guilty or innocent. Someone asks, "Are my fears real or imaginary?" and the unsatisfying answer is "both."

Foolish predictions: Probably more harm comes from self-fulfilling prophecies than from any other misuse of language. "I am a Scorpio, therefore . . ." "I just know that I won't be able to cope." "This paper work is driving me crazy." "I am (and therefore will be) a sinner."

Projections: One's use of language not only shapes one's environment but ultimately and astonishingly creates it. When you say that the Grand Canyon is beautiful, then it ceases to be an ugly gash. Most adjectives, on inspection, prove to be judgemental, subjective, questionably true in reality. Whenever one makes a value statement or projection, he should be mindful that he is doing so, and under his breath perhaps he should add "to me."

Generalizations: This bifurcate fallacy includes jumping from one or a few instances to a wide or universal generalization. Or, conversely, one assumes that all the members of a class will have identical traits. "I hate men." "Big industry is taking over the country." "People with jutting jaws are stubborn and aggressive." Generalizing and abstracting are gemini.

Most of the malignant fallacies are interlocked, like roots in the ground of foolishness or neurosis. Space has permitted only cursory mention of a few. Not to be overlooked are the mental mechanisms, the misstatements which underlie the various neuroses.

Language is the executive of the human organization, supervising emotions and behavior. Whenever the executive sends down wrong or contradictory or misleading orders, the organization is in chaos.

To be mentally healthy, in sum, is to mean what you say (especially to yourself) and to say what you mean. To be wise is to say what is probably true and under what conditions and with what degree of probability. Your listening and responding mind and body will be grateful. So will we.

*Seminars in*
*Gastroenterology*
*and Liver Disease*

# Intestinal Gas

Stephen Glouberman, M.D.

Editors:

Leon Rigberg, M.D.
Stephen Glouberman, M.D.
George Burdick, M.D.

The many manifestastions of gas in the intestinal tract are present in all of us at various times. Yet effective therapy for so common a problem is often elusive. Burping, bloating, "gas" pains and flatus are very common, yet knowledge of the pathophysiology of these symptoms has only recently become available, but remains incomplete. One of the reasons for this has been the lack of methods to adequately and accurately study this problem.

## VOLUME AND COMPOSITION

Within the past ten years, however, techniques have been devised to measure the volume and composition of gas at different levels of the intestinal tract. By intubating the stomach and aspirating the gas, it has been found that 79% is nitrogen, 17% oxygen, and 4% carbon dioxide. This compares to air which has 78% $N_2$, 21% $O_2$ and less than 1% $CO_2$. The excess $CO_2$ is thought to be due to the neutralization of gastric HCl by intestinal and pancreatic bicarbonate, resulting in

and $CO_2$. Colonic gases contain an average of 64% $N_2$ (range 26-88), 0.69% $O_2$ (0.1-2.3), 19% $H_2$ (0.06-47), 8.8% methane ($CH_4$) (0-26), 14% $CO_2$ (5.1-29). By infusing the gas argon into the jejunum and then collecting the gas that leaves the rectum, the volume and composition can then be analyzed. By this method the volume of gas present in the intestinal tract below the stomach at any one time ranges between 30-200 cc, and averages 100 cc.[1] These values are the same whether the individual is "gassy" or not.[2]

Burping is the release of gas from the esophagus, and is preceded by a swallow during which air is introduced into the esophagus. Belching is involuntary sudden release of gas from the stomac and is often more violent than a burp. Bloating is feeling of abdominal fullness which occurs soon aft eating, but can also be present during emotion tension or following smoking. When eating, swallo ing excessively when tense, or smoking, air delivered into the upper intestinal tract and unle dissipated by absorption, belching or passage flatus, discomfort results. Neutralization of HCl $HCO_3$ is also an important source of gas as 1 ml. HCl results in 22 ml. of $CO_2$.

Many foods are known to be "gassy". Beans, pea cauliflower, cucumbers, cabbage, broccoli, radishe and brussel sprouts are among these. Beans a notorious in this regard and the mechanism is t presence of the carbohydrates raffinose and stachyo which they contain which cannot be metabolized b man, but is fermented by colonic bacteria to $CO_2$, H and in some individuals, $CH_4$. Four to eight hou after the ingestion of a meal rich in beans, there is a fold increase in the volume of flatus produced.[3] Hig fiber content in the diet will also result in a great gas production because of metabolism by colon bacteria of undigested cellulose.

The $N_2$ present in the colon is mainly fro swallowed air, but some comes from bacteri deamination of amino acids. Some nitrogen ma diffuse into the colonic lumen from the blood, or vi versa, depending on local concentration gradients.

Oxygen is utilized by aerobic bacteria and does n exceed 2% of flatus gas. Most of the $O_2$ from t upper small intestine is absorbed or utilized by aerob organisms.

Hydrogen must be produced in the lumen of t bowel as none is present in air. No human metabol process results in $H_2$, so bacterial fermentation, b both aerobic and anaerobic organisms, must responsible for its production. Following ingestion meals rich in carbohydrates, fiber or beans, there

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reater substrate available for bacterial fermentation nd resultant $H_2$ production. In malabsorptive condi- ons, less digestion occurs in the small intestine and iore substrate is presented to the colon for bacterial ction. Coliforms are thought to be the major rganism resulting in $H_2$ gas, and lactose is a major ubstrate. This is the mechanism of bloating and atus in patients with lactase deficiency.[4]

Methane is also produced exclusively in the colon as one is present in ambient air. Only 1/3 of humans an produce $CH_4$ and this is a genetic trait. No sub- trate has been found to be associated with $CH_4$ roduction. Rather, it appears that the genetic predis- osition is for the carriage of the appropriate micro- rganisms, but these are not yet identified, $CH_4$ and $I_2$ both diffuse out of the lumen into the blood and an be measured in the breath by gas chromato- raphy.

Carbon dioxide is produced in large quantities in the ody as it comprises less than 1% of ambient air, but iay represent over 50% of flatus after meals rich in ork and beans.[3] Neutralization of HCl as discussed bove, difussion into the bowel lumen from the blood, nd endogenous production in the gut lumen by acteria are all mechanisms of its production. As with ydrogen, much more $CO_2$ is present in the gut lumen ollowing a meal than in basal states.

The five gases discussed above comprise over 99% f bowel gas, but are all nonodorous. The presence of race quantities of ammonia, hydrogen sulfide, idoles, skatoles, volatile amines and short chain fatty cids impart the odor to flatus.

## REATMENT

Treatment of disorders of "gaseous enteropathy" eaves much to be desired. Gum chewing, sucking andy, drinking from narrow-mouthed bottles, use of arbonated beverages and smoking should be cur- ailed. Rapid bolting of food likewise should be iscontinued as this, too, leads to excess air being igested. The nervous air swallower should be apprised that this factor is exacerbating his symptoms. Avoidance of gas-forming foods should be encouraged. Mild tranquilizers may afford some relief to anxious individuals. Neutralizing $HC_l$ with antacids will benefit some individuals.

Simethicone is an agent that reduces surface tension and allows more ready elimination of gas bubbles.[5] However, universal efficacy has not been achieved with this agent, but it is worth a trial, nonetheless. Anticholinergics have been even less helpful and may adversely affect patients by drying the mouth with resultant swallowing efforts made by patients to overcome this side effect of the drug.

Malabsorptive states should be corrected if present as these conditions result in undigested substrate being brought to the colon and gas produced. If diarrhea is present due to rapid small intestinal transit, antidiarrheal agents or anticholinergics may be helpful in reducing colonic substrate. Avoidance of high carbohydrate foods, beans, fruits and vegetables as enumerated previously may be useful.

## CONCLUSION

Significant progress has been made in recent years in the universal problem of gas, due to improved methods of studying this problem. From these researches, class has been given to gas, and status to flatus. It is expected that further advances will be forthcoming through intensive scientific study. So, for those of us who fart, take heart!

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**Obstetrics and Gynecology**

# Relicensure and Recertification

Warren H. Pearse, M.D., FACOG

Few issues have elicited such vehement opposition as the requirement for relicensure and recertification. Most practitioners probably view this as yet another imposition upon the ever-narrowing ability to practice "freely". This "fact of life" has now been made evident to specialists in OB-GYN. The first recertification examination will be administered on December 3, 1977. Dr. Pearse's paper presents the current status of recertification in OB-GYN from his position as Executive Director of The American College of Obstetricians and Gynecologists.

Editor:
Donald J. Ziehm, M.D.

Within the past few years there has been a great deal of activity in the medical profession relating to assuring the continuing competence of physicians. Two areas in this quest for assurance that have caused considerable physician concern are relicensure and recertification.

**I. Definition.** At the outset, let us distinguish between a license and a certificate. A license is a legal permit to do something. It is ordinarily conferred by a governmental agency. Driver's licenses, marriag licenses, and licenses to practice medicine ar examples. The permit, having been given, may also b taken away or revoked under certain circumstances and each of the three foregoing are examples c licenses which may be revoked.

Certification, on the other hand, is a reward fo accomplishment or recognition of special achievement The M.D. degree, a certificate from a hospital upo completion of a residency or certification by a American Board are examples. These recognitions ( accomplishment cannot be taken away or revoke unless the original award was conditional. Fo example, the American Board of Obstetrics an Gynecology indicates that the certificate may b revoked only if false information was given i application to the Board or there is violation c standards of the ethical practice of medicine.

**II. Motivation.** Why is the sudden pressure fo relicensure and recertification? The often used statement that "If we don't do it, the government will do i for us" does not always have a basis in fact. But i this instance, it does. The 1970 HEW Health an Improvement Training Act required a national corporation for accreditation which did include medicine Before this was implemented, however, medicine wa specifically excluded by subsequent legislation passe in 1973. In that same year, the written legislativ

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ntent accompanying health manpower legislation stated — although this does not have the force of law — "Professional organizations (such as specialty Boards) are urged to incorporate a specific requirement for assurance of a continuing level of practitioner competence."

In the Health Professions Education Assistance Act of 1974, the following amendment was inserted by Senator Edward Kennedy: "Section 799 A (a) (1). Within two years of the date of enactment of this part, the Secretary (of HEW) shall, in consultation with appropriate professional organizations, and in co-operation with any recognized national professional testing organization or organizations, develop and establish national standards for the licensure of physicians and dentists and prepare appropriate examinations for the initial licensure and appropriate procedures for the subsequent renewals of such licensure (which shall be required periodically but at least once every six years)."This section of the bill was deleted before final passage.

At the present time, there is no federal legislation which requires either relicensure or recertification of physicians. Nonetheless, the legislative intent over the past several years is clear and certainly suggests that federal legislation will be forthcoming unless medicine takes specific action on its own.

**III. Arguments.** The arguments pro and con concerning relicensure and recertification have been intense. They frequently sound like those heard over abortion or other strongly held positions, in which each side believes his own and is unwilling to listen to the other.

Con — Those speaking in opposition say that physician professionals will continue their competence, and there is no need for tedious procedures of recertification. Further, examinations don't measure the ability to practice medicine. Why don't we recertify lawyers and congressmen first, and then physicians would be willing to accept the burden? There isn't any law requiring us to do it, why don't we wait until we have to do something? Or, as one pathologist said, "When something isn't worth doing, why are you trying so hard to do it well?"

Pro — Those arguing in favor say that professionalism and competence mark a professional; why should we not be the most professional we can and demonstrate it by recertification? Let's do it now and do it our way — if we wait, we'll have to do it the way the lawyers and the Feds want — there are already three times as many lawyers as physicians. Finally, the periodic reexamination of airline pilots is usually cited as a successful procedure with which everyone concurs.

**IV. Methods**. Broadly speaking, there are three approaches which might assure continuing competence: acquiring some specified number of hours in continuing education, practice audit and peer review, and examination. A number of states and medical societies have moved actively in the direction of continuing education requirements. The situation changes almost day-to-day, but as of April 1, 1977, the Medical Practice Acts in seventeen states give the state board of medical examiners authority to require evidence of continuing medical education as a condition for reregistration of the license to practice medicine. Additionally, seventeen state medical societies have made decisions which require continuing medical education as a condition of membership. Three of these states, Arizona, California, and Kansas overlap with those in which continuing education is required for relicensure. Additionally, twelve medical specialty societies either suggest or require continuing medical education for continuing membership in the society. In Arizona, state medical society membership requirements are based on the AMA Physicians' Recognition Award. The state licensing Board has a broadly stated requirement for completion of a continuing medical education program every three years.

Working under the umbrella of the American Board of Medical Specialties, all twenty-two primary medical specialty boards have established a policy to provide recertification. Fourteen of these have already established dates for recertification procedures, varying from the Boards of Internal Medicine and Family Practice, which have already given their first examination, to the Boards of Surgery, Thoracic Surgery, and Rectal Surgery which will give the first examination in 1985 or later. An additional eight boards have endorsed the policy of recertification but have not yet established procedures.

A discussion of the use of practice audit or peer review in demonstrating continuing competence is outside the scope of this discussion. However, the procedures of some boards for recertification include either or both practice audit and a continuing education requirement in addition to formal examination.

It is easier to point out the deficiencies of each of these approaches than it is their virtues. While credit for continuing education efforts is becoming more sophisticated and ultimately will probably include some sort of knowledge testing procedure following the experience, it certainly is possible to sign in at a postgraduate course in a resort area, play golf for three sunny days, and return home refreshed if not reeducated. Practice audit and peer review is still in the embryonic state. Recent publications have suggested that process criteria used for audit cannot be related to successful patient outcome. Finally, multiple choice questions don't necessarily demonstrate the ability to make a diagnosis or deal with all of the involved factors in a complex medical or surgical patient problem.

TO BE CONTINUED

Oncology

# Radiotherapy With Interstitial Implants

Kenneth Lucas, M.D.

Editors:
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Recently, the use of interstitial radiotherapy has received considerable attention in the lay press and societies concerned with radiation oncology have shown renewed interest in this treatment approach. Articles on interstitial therapy have appeared in both **Time** and **Newsweek**, and an international conference called "Renaissance in Interstitial Therapy" was held in San Francisco a few months ago. In addition, a great many physicians from other disciplines have expressed interest in this type of therapy and would like to know more about it. The purpose of this article is to provide some basic information on this subject.

## DESCRIPTION OF INTERSTITIAL IMPLANTS

Interstitial therapy (also known as brachytherapy, plesiotherapy, or, as preferred by the Europeans, endocurietherapy) involves the placement of radioactive isotopes within the tumor. Implants may be temporary or permanent, and almost all of them require an operative procedure with general anesthesia.

Temporary implants are those which are placed in the patient and then removed after a few days Seventeen-gauge steel tubing, which serves as a guide through which plastic tubing is threaded, is placed through the tumor in the operating room. The steel tubing is then removed, leaving the plastic tubes within the tumor. These are then atraumatically anchored to the patient's skin and the patient is sent to the recovery room. After the patient has been returned to his or her room, the actual loading of the radionuclide takes place. The implant is left in the tumor for a specified period — usually between 4 and 5 days — and then is removed. After the radioactive sources are removed, the plastic catheters are removed. This usually requires only minimal analgesia as it is usually painless and almost never associated with bleeding. Isotopes used in temporary implants have included Cobalt 60, Tantalum, and Radium, but the isotope which is used most often at present is Iridum 192.

For permanent implants, the radioisotope (in the form of seeds or pellets) is placed in the tumor by means of a seed "gun" and not removed. Examples o isotopes for this application would be Gold 198 and

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decayed Iridium 192, but at present the most common sotope used is Iodine 125.

## RATIONALE

Those familiar with the practice of radiotherapy must by now be asking why go to all this considerable trouble and expense when one has at one's disposal the convenience of external beam radiotherapy as delivered by a Cobalt machine or a linear accelerator. Consideration of the good clinical results which have been regularly observed over the last half century with intracavitary radium implants in intra-uterine tumors helps to illustrate several differences and advantages of internal irradiation.

First, it has been noted that this type of therapy is somehow more efficient in destroying large masses of tumor and yet results in less morbidity for the dose delivered. This can in part be explained by the fact that an enormous dose is confined to a very small tissue volume. When one considers the amount of radiation that can be delivered with the external beam to the same target that one treats with intracavitary sources, the difference between the two becomes clear. To irradiate the uterus with the external beam, a total dose of only 5,000 rads can be delivered since the external beam irradiates a much larger volume, including normal tissue such as the bladder, gut, and bone marrow lying in the path of the beam. When one gives intracavitary radiation to the same target volume and measures the dose to the mucosa of the cervical canal, one may reach a total of 30,000 rads. The dose fall-off laterally is so rapid, however, that when one calculates the dose to the pelvic wall one arrives at a figure of only 1,000 rads. The usual radiation tolerance doses refer to the tolerance of normal tissues rather than tumor. Thus, if the radiation can be confined solely to the tumor, much larger doses of radiation can be given without appreciably increasing the morbidity.

A second difference between interstitial (and intracavitary) irradiation and external beam therapy is in dose rate. The external beam delivers its dose to the target volume in pulses lasting just a few minutes, giving a dose rate on the order of 3,000 - 4,000 rads per hour. With interstitial sources, tumor cells are exposed to constant radiation for several days and herein lies another significant difference between the two techniques.

Cancer cells with identical histologic type can still be subdivided according to their cell cycle time. Cells that have a good supply of nutrients are responsible for the numerous mitotic figures seen under the microscope. After a short course of radiation therapy, mitotic suppression occurs, and the cells that are left are presumably the ones that have longer cycle times and are less radiosensitive. These hypoxic cells are believed to be responsible for tumor persistence after the use of cytostatic agents of all kinds, including radiation. Human tumor cells have a cycle time of between 1 and 5 days and the amount of radiation the tumor cell receives per cycle time is believed to be of great importance. With the external beam, 800 - 1,000 rads of radiation are delivered per week. Thus, if a hypoxic cell has a cycle time of 5 days, it will receive 1,000 rads via external beam, whereas with the interstitial technique it would receive on the order of 5,000 rads. Further, a normal cell from tissue in the vicinity of the tumor having a cycle time of 1 day would receive on the order of 1,000 rads per cycle time, which would be much less radiation than that received by the tumor cell. This represents a vastly oversimplified view of the difference in effect between the external beam high dose rate and the interstitial low dose rate, but a detailed review of all possible effects is beyond the scope of this article.

One other factor leading to renewed interest in interstitial implants should also be mentioned. Previously, interstitial implantation had to be carried out using preloading techniques. That is, the radium needles were loaded "hot" in the operating room, giving radiation to the operator, as well as to all other personnel. Patients also had to be taken to the diagnostic radiology department for localization films which delivered a certain amount of radiation to personnel there. Now, after-loading techniques have been developed which, as stated above, lead to almost zero exposure to other personnel. Further, since the radioactive substance is not placed in the operating room, the operator can take much greater pains in the placement of the catheters to insure dose distribution.

## APPLICATIONS

Whenever possible, removable after-loading implants are used. Any tumor palpable on the outside of the body is implanted with Iridium, whereas tumors that are not accessible from the exterior of the body are implanted with the I-125 permanent seeds during surgery. Iridium implantation is carried out in the head and neck region where tumor is located as low as the pyriform sinuses, but is most frequently done on the tongue and floor of the mouth, tonsilar fossa, and lip. Neck masses are especially suitable for implantation, as are tumors of the breast, rectum, and vagina. Permanent implantation is carried out as mentioned in the interior of the body and common examples of suitable sites are lung, prostate, pancreas, and bladder.

Excellent examples of the applicability of the interstitial implantation are tumors in the breast or head and neck region. In head and neck lesions, the previous maximum dose that could be given was 7,000 rads, but it is now possible to give up to 9,000 rads with consequent greater chance of cure and reduced chance of morbidity. In addition, since the radiation is confined to a small volume, operability is not diminished. When one gives 7,000 rads to a head and neck tumor, it is often difficult to convince a surgeon to operate in that area should a recurrence take place.

However, in a patient who had had an interstitial implant, the surgeon would be operating in a field which had received between 4,500 and 5,500 rads, as resection would encompass the area which had received the very high dose of radiation. The same principle applies to carcinoma of the breast and there is extensive literature, primarily from France, which indicates that survival is not impaired in any stage of breast cancer by treating with radiation therapy per primam and reserving mastectomy for local radiation failure. This, of course, results in one of the radiation therapist's primary goals: preservation of the part. Cosmetic results in the treatment of cancer of the breast by this technique have been superb, and where this technique has been widely publicized and widely practiced, women have tended to see their physicians earlier since they know that treatment does not necessarily mean radical surgery.

Another common application of interstitial technique is in patients suffering a recurrence in spite of previous therapy. Because of the type of radiation given and the localization of the dose, retreatment can almost always be given to sites of local recurrence, even after previous irradiation.

## SIDE EFFECTS

The morbidity associated with interstitial implantation is often somewhat different from that associated with external beam therapy. As physicians reading this article have probably observed in their own patients, very often the morbidity with external beam therapy is associated with changes in the integument. This is because the skin is the first structure to be penetrated by the external beam. However, when the isotopes are placed inside of the tumor, one is in effect using the tumor to shield the skin rather than the reverse. However, subdermal lesions that have involved the skin may ulcerate and any tumor which extends between adjacent structures and which is eliminated by radiation may lead to fistula formation. In the head and neck region, a brisk mucositis is always produced. However, the area where the radioisotope is inserted usually heals without a trace of the points of insertion. Osteonecrosis has not yet been a problem. In the pelvis, permanent implants sometimes result in a slough of the tumor with urinary bleeding and obstructive symptoms. Implantation of carcinoma of the rectum often has resulted in rectal pain and is now carried out in two stages. All pelvic implants are of course in the vicinity of intestine and as with the external beam, diarrhea can result. With vaginal implants, a vaginal edema and mucositis may occur. This may last a month and be very troublesome to the patient.

## SUMMARY

Despite increasingly sophisticated external beam equipment used in radiation therapy, there is renewed interest in interstitial implants due to their inherent efficiency of dose delivery to the tumor.

*Rheumatic Diseases*

# Arthrocentesis And Synovianalysis

### Getting the Most out of a Joint

Stuart L. Posner, M.D.

Arthrocentesis is a technically simple, low ris procedure which potentially can afford the clinician great deal of useful information about the etiology of particular arthritic disorder. In this day of increasingly complex and costly diagnostic technology (witness the emergence of computerized axial tomography,) it is comforting to reflect that the ubiquitous needle and syringe can still be an effective instrument in the retrieval of valuable medical data. Aspiration o fluid from a joint should be considered in all instances in which a significant effusion is recognized but its causation is in doubt — and no contraindications exist. While all the appendicular articulations are accessible to the exploring needle, the knee joint represents the most frequent site of gross joint fluid accumulation and, conveniently, the most easily aspirated. It will serve as the model for the discussion of technique.

Two simple maneuvers may be employed to assess the presence of free fluid within the joint cavity i obvious knee joint capsule distention is not appreciated on routine examination. "Ballotting" or tapping the patella downward with the knee relaxed in position of full extension will give the examiner the opportunity to recognize any increased displacement of the patella by fluid contained within the joint space. Alternatively, a distinct "fluid wave" may be elicited by first stroking the medial aspect of the knee

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number of times with the fingertips and then more forcefully compressing the lateral surface of the knee so as to shift any free fluid back once again into the medial compartment. A bulging of the medial aspect of the joint will be recognized in the presence of even a small but diagnostically significant effusion of 10 ml or less. When careful attention is paid to local antisepsis by the use of an iodine scrub followed by alcohol wash of the skin at the site of joint puncture, introduction of bacterial infection is highly unlikely, and drapes, sterile gloves, and surgical masks are not normally necessary. A topical coolant such as ethyl chloride may be employed along with subcutaneous and periarticular infiltration of a local anesthetic just prior to the introduction of the aspirating needle into the articular capsule.

The joint space of the knee may be entered safely at a number of sites, but the medial approach appears to be acceptable under most circumstances. A point 1 to 2 cm below the medial margin of the patella at its mid superior-inferior dimension is located. With the knee fully extended, the patient is encouraged to relax the quadriceps muscle group so as to allow for the advancing of the needle in a horizontal plane between the undersurface of the patella and the patellar groove of the femur. Penetration to a depth of 1/2 to 1 inch is generally required to perforate the joint capsule and obtain fluid. In instances where there appears to be a distinct suprapatellar bursal accumulation, puncture at the lateral and superior margin of the patella may be elected. There are few but important contraindications to joint aspiration. The presence of local, soft tissue periarticular infection at the site of puncture is an obvious one. In addition, aspiration should be deferred in instances of known systemic bacteremia so as to avoid the possibility of the inoculation of organisms into the joint space from hemorrhage caused by penetration of the synovial microvasculature.

Having thus obtained the synovial fluid sample, what clincally useful information should be sought? Synovianalysis starts with the observation of the color and clarity of the joint fluid. Normal joint fluid has a slightly yellow cast and is transparent. A total white count of such a specimen typically would be under 200 cells. As the cell count rises, turbidity of the fluid naturally increases. Attention should next be given to the joint fluid viscosity. This property of synovial fluid is largely determined by the concentration and molecular integrity of the hyaluronate moiety. Hyaluronate is synthesized by the metabolically active lining cells of the synovial membrane and is composed of equi-molar concentrations of glycosamine and glucuronic acid. As inflammatory activity increases, hyaluronate concentration falls. This is due in part to reduced synthesis of this compound as well as degradation of the molecule by enzymes released from leukocytes within the joint effusion and possibly from the synovial lining cells. A fluid from a normal joint or one of low inflammatory activity such as seen in osteoarthritis will have a high viscosity and can be strung between the thumb and forefinger to a distance of at least two inches. The "mucin clot" test by which a few drops of glacial acetic acid are added to a test tube containing a small volume of synovial fluid is another means of assessing hyaluronate concentration. Once again, a fluid from a normal joint or one from a noninflammatory effusion will yield a firm, dense clot, whereas in inflammatory effusions a flocculent and friable clot will result.

Microscopic study of the synovial fluid should include a determination of the total cell count as well as a review of cellular morphology of the fluid as seen in a Wright-stained smear of the centrifuged specimen. The enumeration of the white blood cells in synovial fluid may be performed in a standard hemocytometer using normal saline rather than acetic acid as the diluent so as to avoid hyaluronate precipitation and cell clumping. It is the total cell count which has provided a most useful means of classifying various types of synovial fluids. A Group 1 fluid typically has less than 2,000 white blood cells per $mm^3$. A Group II fluid may contain between 2,000 to 20,000 cells, while a Group III fluid has in excess of 25,000 cells per $mm^3$. The various arthritides which produce effusions falling within these categories are summarized in Table I. Naturally, there can be considerable range of cell counts for any given condition depending upon the stage and severity of the

TABLE I. ( Modified from "Arthritis," Hollander and McCarty)

| | | |
|---|---|---|
| GROUP I FLUID ("Noninflammatory") | 1. Normal<br>2. Traumatic Arthritis<br>3. Osteoarthritis | Cell count less than 2000/$mm^3$ |
| GROUP II FLUID ("Inflammatory") | 1. Systemic lupus<br>2. Rheumatic Fever<br>3. Rheumatoid Arthritis<br>4. Rheumatoid Variants<br>5. Gout<br>6. Pseudogout | Cell count varies from 2000/$mm^3$ to 20,000/$mm^3$ |
| GROUP III FLUID ("Septic") | 1. Bacterial or Fungal Infection<br>2. Acute Gout | Cell count greater than 25,000/$mm^3$ |

inflammatory process, and any classification must be regarded only as a rough guide to differential diagnosis. The predominant cell type as seen in the Wright-stained smear may further help in diagnosis. Thus, in a rheumatoid effusion the polymorphonuclear leukocyte predominates whereas in an effusion from a patient with systemic lupus the lymphocyte will be seen in highest concentration. Further study of the synovial fluid cell morphology may disclose such additional findings as the presence of typical inclusion-laden polymorphonuclear leukocytes known as "ragocytes" characteristic of rheumatoid arthritis. Rarely, spontaneous LE cells may be seen in effusions from patients with active systemic lupus.

Polarized microscopy of a wet mounted specimen is another important aspect of synovianalysis. A standard laboratory microscope can be inexpensively adapted for this purpose with the aid of plastic polarizing discs. One such disc may be placed above the light source and the other over the microscope oculars. A technique for converting the normal laboratory microscope into a first order red compensated polarizing microscope using a filter made from cellophane tape has recently been described.[1] With such equipment the needle-shaped monosodium urate crystal will appear to be strongly negatively birefringent while the blunt-edged, rod-shaped pyrophosphate crystal as seen in effusions from patients with pseudogout will show a weaker positive birefringence. Other crystaloid elements which may be encountered and readily distinguished from urate and pyrophosphate crystals include cartilagenous fragments and cholesterol crystals.

There are a number of important immunologic studies which may be performed on synovial fluid and may require sending the specimen to a more specialized laboratory facility. These determinations may include detection of synovial fluid rheumatoid factor positivity and synovial fluid complement concentration. Under most circumstances, if rheumatoid factor is present in the serum, it will be found in a comparable or slightly lower titer in the synovial fluid. However, there are instances where rheumatoid factor will be detected only in the synovial fluid.[2] This observation has suggested that rheumatoid factor is produced locally by immunocompetent cells within the synovium. The recognition of rheumatoid factor positivity within synovial fluid may be an early clue to the diagnosis in an otherwise seronegative patient. The depression of synovial complement has recently been found to be a potentially useful indicator of the severity of the rheumatoid process and may be of value in selected clinical circumstances.[3] A reduction of synovial fluid complement frequently is also noted in instances of synovitis secondary to systemic lupus.[4] Complement levels in most other inflammatory fluids are elevated in proportion to the elevation of joint fluid protein.

In instances where joint fluid effusion is considered to be secondary to infection, gram stain and culture will be of obvious importance. Synovial fluid glucose may be measured along with a simultaneously obtained plasma glucose. In the presence of significant bacterial and fungal infection, synovial fluid glucose will typically be 50 mg% or more below the plasma glucose concentration. In effusions not due to an infectious cause but in which there may be a significant elevation of synovial fluid leukocytes, joint fluid glucose may be reduced to a lesser degree.

It is hoped that this overview of some aspects of technique of arthrocentesis and the elements which comprise the basic synovianalysis will encourage their greater utilization by the practicing physician in the office diagnosis of rheumatic complaints.

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**Suggested Additional Reading**

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*Radiology*

# CASE OF THE MONTH #25

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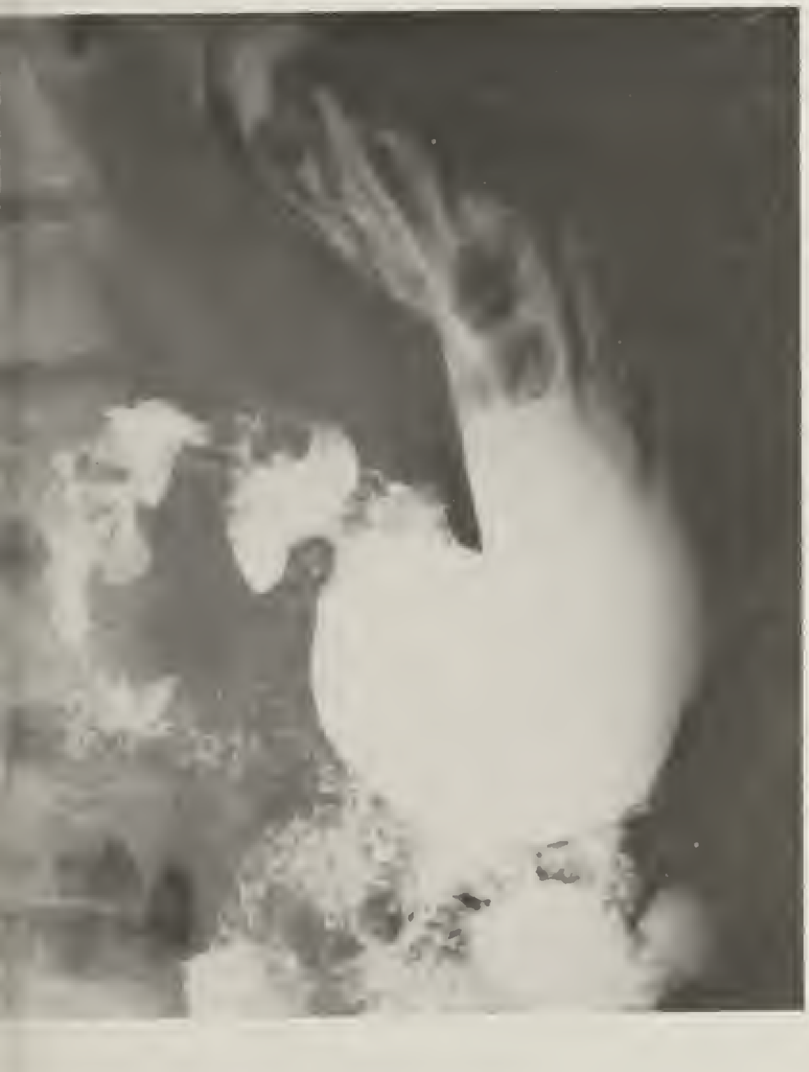

An upper gastrointestinal series was performed on a 36 year old man because of intermittant abdominal pain, weight loss and mild GI bleeding. He was known to have multiple skin abnormalities, lytic bone lesions, and liver enlargement. Figure 1 is a representative film of his stomach and duodenum. What is the abnormality? What possible diagnosis would explain his history, known skin and bone lesions, and his radiologic abnormalities?

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# Metastatic Melanoma To The Stomach And Duodenum

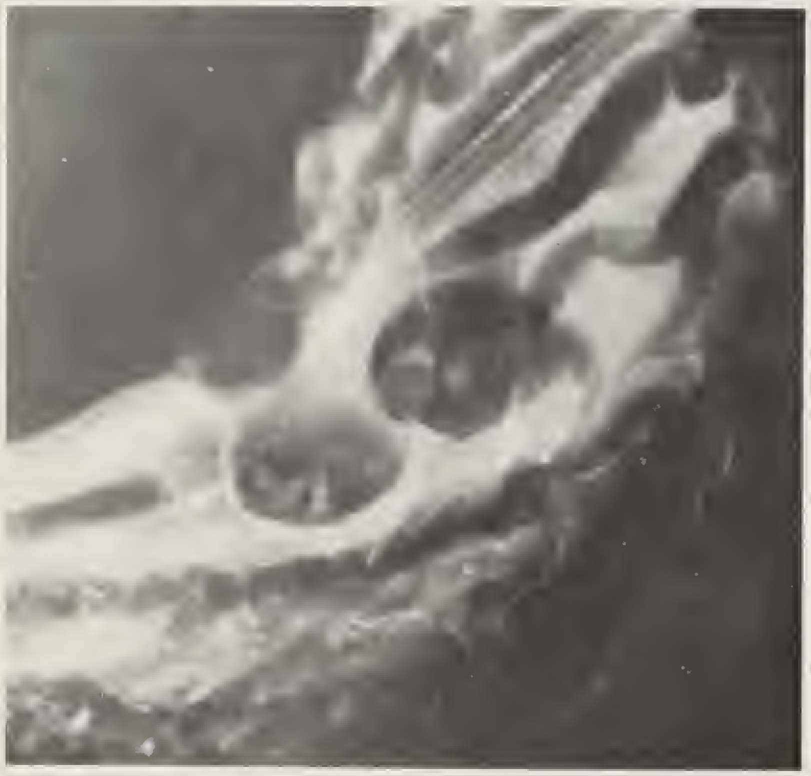

Figure 2

Figure 1 shows several nodular lesions within the stomach and similar lesions in the duodenal bulb and sweep. Many of these have an associated central collection of barium. Figure 2 is a close-up view of the stomach demonstrating the central barium collections typical of these so-called "target" or "bull's-eye" lesions of metastic malignant melanoma. The nodules represent well defined intramural metastatic deposits of tumor cells with either a central area of ulceration or umbilication which is demonstrated by the central barium collection. [1] The patient had a malignant melanoma removed from his left arm and was known to have widespread bone and lung metastases at the time of his GI exam.

The primary melanoma tumor may remain inconspicuous though metastases are widespread throughout the body. Gastrointestinal involvement is commo and may be manifested clinically by intestinal bleedin or obstruction[1]. The stomach and duodenum ar most frequently involved while the colon is ofte spared. These metastatic lesions appear to be found i decreasing frequency from the proximal to the dista gut[1]. Gastrointestinal metastases from melanom may have several forms including ulcerated wel defined nodules (Figures 1 and 2), submucosa plaques, and polypoids lesions. These different form frequently coexist together[1]. Intussusception car also occur.

While nodular "target" or "bull's-eye" lesions in th stomach and small bowel are most commonl associated with metastatic malignant melanoma, they can occur with a variety of other conditions and their presence is not pathognomonic of melanoma [2] Lymphoma is probably the second most common cause of these lesions, though they are not present in most cases of gastrointestinal lymphoma. Rarely, other malignancies can give this same appearance, especially metastatic breast and lung carcinoma, Kaposi's sarcoma, carcinoid tumors, and multiple spindle cell tumors [2] Benign disease may sometimes produce similar findings and they have been described with eosinophilic granuloma and aberrant pancreas[2]

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# The Surgical Treatment Of Abdominal Injuries

C. Herbert Fredell, M.D.

An extensive experience in management of abdominal njuries in a relatively small community is presented. The analysis is a comprehensive one and indicates excellent overall results that demonstrate management capability in a small town as a result of a cooperative team effort, efficient and adequate personnel and detailed management of the individual patient. In addition to the analysis of the patients treated in the Flagstaff Community Hospital, a brief review of the literature is presented for comparative, analytical purposes.

Abdominal injuries have required surgical treatment at the Flagstaff Community Hospital in 186 patients during a period of twenty years. The author reported his experiences with the initial 66 cases of this total experience.[9] Since May of 1967, an additional 120 cases have been treated by the author and three additional general surgeons. This report contains the details on the latter experiences.

During the period of this study, a more conservative management of abdominal stab wounds and a more detailed evaluation of blunt abdominal injuries has been done preoperatively. A comparison of results (Table 1) between the individual and collective experiences with these problems shows an unchanged rate of negative abdominal exploration and an unchanged overall postoperative mortality rate. This may in part be attributed to the increase in the multiplicity of injuries and the complexities of the problems seen during the latter era of this study. Patients now arrive at the hospital alive with injuries that were fatal prior to arrival in the past. Better ambulance and paramedic service accounted for this change.

Among those patients that were admitted to the hospital and then had a delay in diagnosis and treatment in excess of 24 hours, there was a measurable increase in morbidity and mortality. Among those patients with a delay in diagnosis and treatment in excess of 24 hours prior to admission to the hospital there was an increase in the morbidity rate.

Death following surgical treatment of abdominal injuries was related to the nature of the injuries and the status of the patient upon arrival in the emergency department. In all cases of death, the injuries were multiple body injuries. In the majority of the 11 fatalities, the intra-abdominal injuries were multiple and required more than one surgical procedure within the abdomen. All of the patients who died were in shock upon arrival in the emergency department. Seven of the 11 deaths were due to pulmonary and/or cardiac failure postoperatively. Four were due to hemorrhage.

## MATERIAL AND METHODS:

A retrospective analysis of the records of 120 consecutive cases of abdominal injury that were treated surgically in the Flagstaff Community Hospital from May 1, 1967 to January 1, 1977 was done. There were 167 intra-abdominal injuries and 79 injuries outside the abdominal cavity among 120 patients.

There were 86 males and 34 females with most of the patients being in the second to sixth decade of life. The automobile caused 61 admissions while stabbing produced 18 and gunshot accounted for 16. Nine

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From: Flagstaff Community Hospital, Flagstaff, AZ 86001, Dr. Fredell, Chief of Surgery.

Table 1
Abdominal Injuries
Flagstaff Hospital 8/1/56 to 1/1/77

| 8/1/56 to 5/1/67 | | 5/1/67 to 1/1/77 |
|---|---|---|
| 66 | Number of Cases | 120 |
| 86 | Number of Injuries | 167 |
| | **Intraperitoneal Injury** | |
| 40 | Single | 68 |
| 20 | Multiple | 39 |
| 6 (9%) | None | 13 (9.2%) |
| 13 pts. | **Complications** | 47 pts. |
| 19.6% | % | 39% |
| 6 | **Deaths** | 11 |
| 9% | % | 9% |
| | **Causes of Death** | |
| 1 | Respiratory Failure | 4 |
| | Cardiac Failure | 1 |
| | Hemorrhage | 4 |
| 3 | Sepis | 2 |
| 1 | Renal Failure | |
| 1 | Liver Failure | |
| | **Main Injuries Associated With Death** | |
| | Ruptured Spleen and Multiple Rib Fractures | 2 |
| | Ruptured Spleen & | |
| | a. Multiple rib fractures & ruptured kidney and aorta | 1 |
| | b. & Ruptured Liver | 1 |
| | c. & Ruptured Bowel and head injury | 1 |
| 1 | Ruptured Liver & Multiple Rib Fractures | 1 |
| | Severed Renal Vascular Pedicle | 1 |
| 1 | Ruptured Diaphragm & Colon | 1 |
| 2 | Small Bowel Rupture | 1 |
| 1 | Pancreas, Duodenum & CD rupture | |
| 1 | Ruptured Diaphragm, brain damage & Multiple rib fractures | |

patients fell, five were kicked while four had motorcycle accidents.

When the injuries were confined to the abdomen, there were 38 patients with abdominal injuries and 16 with multiple injuries. When the injuries included additional areas of the body, the intra-abdominal injuries were single in 30 patients and multiple in 23 patients.

The most frequent organ injured was the splee The liver, small bowel and the colon were the ne most often injured, in that order. Retroperitone hematoma produced a significant number of problen that prompted surgical exploration. Associated i juries involved the chest, the bony pelvis ar extremities, in that order of frequency. Head inju complicated the abdominal problems in four cases.

Diagnostic problems among 72 patients with inju confined to only the abdomen occured in eig instances of laparotomy with negative findings. Whe 58 patients with multiple body injuries had laparotomy, five did not have any intraperitone injury. When sinography was used as an indication f exploration in three patients, all of them had negative exploration of the abdomen. In 45 patient needle paracentesis was used as a diagnostic aid ar one of the indications for laparotomy. Among 2 positive taps, there were 3 negative exploration When the 17 patients with negative tap of t abdomen were further evaluated and then explored, had intraperitoneal damage. The total number negative taps with no surgical treatment have n been analyzed.

There were a total of 13 negative explorations of t abdomen. Seven followed auto accident with blu trauma, four followed stab wounds and two followe gunshot wounds. There were no serious postoperati complications or deaths in these cases.

Antibiotics were used in 72 patients witho reaction. Whole blood or packed red cells were used 75 patients without reaction. During the past s months of the study an autotransfusion device h been used during laparotomy with the saving several liters of banked blood.

Delay in the treatment in excess of 24 hours w noted among 21 patients. In 14 of these, the del occured prior to arrival in the emergency departmen Postoperatively, prolonged hospital stay was seen six of these cases.

There were six patients that had a delay diagnosis and treatment in excess of 24 hours aft they had been admitted to the hospital. Of these, s had multiple injuries. Four had chest injury. All h postoperative complications and four died.

## DEATHS AND COMPLICATIONS:

The postoperative complications are summarize (Table 2) There were 47 patients (39%) who had complications. 30 of those patients had multip injuries while 15 patients had single intraperitone injury. Two had no intraperitoneal injury. There we 11 instances of respiratory failure, 17 wound comp cations and three serious infections. Secondary oper tive procedures during the same hospitalization we done in eight patients.

Among the 11 postoperative deaths there were eig males and three females. Only four cases were over years of age and none below 25. Nine of these atients arrived in the emergency department in hock. All deaths followed blunt abdominal trauma ssociated with multiple injuries due to a vehicle ccident.

The operative procedures which were followed by leath most often were splenectomy with another rocedure and bowel surgery. The causes of death vere pulmonary or cardiac in seven cases and due to emorrhage in four cases. Two of the latter had leeding diatheses. Seven of the 11 deaths were within 8 hours of hospitalization and four died after being in he hospital over 14 days.

Two patients died in shock in the operating room luring efforts to repair massive injury. Two patients ver 80 years of age had ruptured spleen diagnosed fter being hospitalized. One of these did not recover espiratory function after anesthesia and died. The econd patient had cardiac arrythmias and impared espiratory function that lead to demise six days ostoperatively.

One patient died after thoracoabdominal injury with nultiple rib fractures, ruptured spleen and ruptured iver. Laparotomy with splenectomy and liver suture vas followed by respiratory insufficiency requiring a racheotomy and a ventilator. A bilateral pneumohorax occured during tracheotomy with precipitous espiratory failure and death one day postoperatively.

One patient had thoracoabdominal blunt injury with ib fractures and hematuria. Retroperitoneal hemorrage due to a severed renal vascular pedicle was reated six days after admission. This was followed ive days postoperatively by peritonitis and septic hock. After a complicated 38 day course punctuated y respiratory failure, pneumonitis and peritonitis and atient died of mesenteric thrombosis.

One elderly man had head injury, abdominal injury nd extremity injury which required a simultaneous raniotomy and laparotomy with splenectomy and owel suture. His postoperative course was punctuted by cardiac arrythmias and failure but he rogressed favorably enough to permit transfer to his ome hospital 21 days postoperatively. He expired hortly after arrival of presumed cardiac causes.

Blunt thoracoabdominal injury produced a ruptured ver and multiple rib injuries in one patient. A right epaticlobectomy was done. Two days postoperatively espiratory failure with pulmonary contusions prouced death.

Two patients had head injury in addition to torso nd extremity injuries. One of these patients had ardiac arrest before surgery and was resuscitated efore a laparotomy with liver suture, vena cava uture, small bowel resection and colon resection was one. After 55 units of blood a bleeding diathesis roduced demise 42 hours postoperatively. The second ead injury patient had spine and abdominal injuries equiring bowel resection two days after admission. A racheostomy was done one day after admission.

## TABLE 2
## THE SURGICAL TREATMENT OF ABDOMINAL INJURIES

**Flagstaff Hospital**
**5/1/67 to 1/1/77**

120 Cases **Complications of Treatment In 47 Patients**

| # of Cases | Complications | # of Deaths |
|---|---|---|
| | **Cardiac** | |
| 1 | Arrest | |
| 1 | Arrythmia | 1 |
| | **Pulmonary** | |
| 13 | Atelectasis | |
| 3 | Pneumonitis | |
| 6 | Pleural Effusion | |
| 1 | Embolus | |
| 1 | Empyema | |
| 11 | Respiratory Failure | 3 |
| | **Gastrointestinal** | |
| 2 | Pancreatitis | |
| 1 | Gastritis | |
| 3 | Fistulae | |
| | 1 Bile | |
| | 2 Pancreas | |
| | 2 Bowel | |
| 1 | Jaundice | |
| 1 | Persistant Ileus | |
| 2 | Bowel Infarction | 2 |
| | **Genitourinary** | |
| 4 | Renal Failure | |
| | **Neuropsychiatric** | |
| 8 | Psychosis | |
| 1 | Convulsions | |
| 1 | Persistant Cerebral Edema | |
| | **Vascular** | |
| 3 | Shock | |
| 4 | Phlebitis | |
| 1 | Secondary Hemorrhage | |
| 4 | Diss. Intravasc. Coag. | 4 |
| | **Wound** | |
| 16 | Infections (deep 8, sup. 8) | |
| 1 | Disruption | |
| | **Infection** | |
| 1 | Peritonitis | |
| 2 | Becteremia | 1 |
| | **Secondary Operative Procedures** | |
| | During Same Hospital Stay | |
| 5 | Drainage of Intraperitoneal Abcess | |
| 1 | Enterolysis | |
| 1 | Thoracotomy with wedge resection of lung | |
| 1 | Tracheostomy | |

During the 23 days after surgery the patient developed pneumonitis, pancreatitis, tracheoesophageal fistula and disrupted the intestinal anastamosis. Death was due to infarcted bowel, pancreatitis, liver abcesses and pneumonitis.

The second patient who died of bleeding diathesis had thoracoabdominal injury with ruptured diaphragm, fractured ribs, pulmonary contusions, cardiac contusion, fractured pelvis and massive retroperitoneal hemorrhage. Suture of the diaphragm, colon resection and tracheostomy were followed by massive bleeding from all sites shortly after surgery was finished.

Among the 11 deaths, four had a delay in diagnosis after the patient was admitted to the hospital. In each of these four cases, the delay in diagnosis contributed to the problems that culminated in death. In the entire series of 120 cases, only six cases had a diagnosis made over 24 hours after admission. Delay in treatment occured when one patient was seen in the emergency department in shock with an abdominal stab wound. Seven units of blood and 80 minutes later the patient was dead of a lacerated aorta.

The death rate following specific surgical procedures is difficult to assess because of the multiplicity and combinations of injuries. Two hepatic lobectomies were done with one death. Four nephrectomies were done with one death. Splenectomy was done in 32 patients of which 15 were done with two or more associated intra-abdominal injuries requiring treatment. Death followed in five of these 15 patients. There were 25 small bowel injuries with seven resections with one death following resection. There were 19 colon injuries with five colectomies with one death following colectomy and small bowel resection.

## DISCUSSION:

A review of recently published reports dealing with abdominal injuries provide a basis for comparison of results and accepted norms. Abdominal trauma has been divided into blunt and penetrating types with results of treatment varying among those groups of cases.[1,6,10,17]

Blunt abdominal trauma has been accurately diagnosed in 97% of cases when peritoneal lavage was used.[1] In a significant number of patients a specific complaint or sign of abdominal injury was lacking.[6] The close observation of a patient with suspected blunt abdominal injury was the most valuable aid in the diagnosis leading to laparotomy. Following laparotomy an overall morbidity rate of 46% and a mortality rate of 14.8% was reported.[6] When a single organ was injured, the mortality was less than when multiple organs were injured. When multiple body areas were injured in addition to the abdominal injury, the mortality rate was higher.[17,6]

Penetrating abdominal trauma has prompted mandatory exploration[8] with a 32% negative exploration rate. In another reported series of blunt abdominal trauma[11] when a diagnostic laparotomy was done when multiple injuries were present and abdominal signs were lacking, negative exploration occured in 19.8% of cases. A decrease in the number of negative explorations of the abdomen has occured among patients with stab wounds of the abdomen.[17] While sinography has been used as a diagnostic aid, it has been noted[3] that it does not have enough value to warrant its continued use.

Nance[17] noted that 95% of gunshot wounds of the abdomen were explored with a negative exploration rate of 13.4% and a 12.5% postoperative death rate He noted that half of the deaths occured within 24 hours of admission and that shock and renal failure accounted for two thirds of the deaths.

The death rate was noted to be 27% when the abdomen and the chest were injured.[6] When a flail chest was present there was a 35% death rate.[19] In 90% of cases of abdominal injury associated with flail chest, there was ruptured spleen, lacerated liver or retroperitoneal hemorrhage.

Ahmad and Polk[1] noted that the mortality following abdominal injury was ultimately determined by the severity of the injury despite the early and definitive diagnosis and therapy.

Liver injury has been studied by several authors.[7,10,20] The mortality has been noted to be 13 to 16%. When the liver was the only injury it fell to 4.4 to 9%. When there were two associated injuries it rose to 16.9%. When the injury was extensive and lobectomy was done a mortality as high as 56% was noted.[10] Trunkey[20] noted a 19% postoperative complication rate and that 67.9% of the postoperative deaths were not related to the liver injury. Defore et al[7] noted that the most frequent causes of death were homorrhage, respiratory insufficiency and multiple injuries.

Delayed rupture of the spleen may actually be an occult injury that was not initially recognized. Budd et al[5] reported the use of arteriography and radioactive scanning techniques in that diagnostic problem.

Pancreatic injuries were followed by a 14% postoperative death rate.[2] The complications and deaths occured more often following gunshot wounds and more often following simple drainage than pancreatic resection. The significance of serum amylase elevation following blunt abdominal trauma was noted by Olsen.[18] When it was rising or remained persistantly high it was significant.

The recent treatment of colon injuries has included the frequent use of primary repair. LoCicero et al[13] reported a postoperative death rate of 9.2% following surgery for colon injury with hemorrhagic shock and sepsis were the common causes of death.

Blunt duodenal injury was studied by Lucas and Ledgerwood[14]. They noted that the factors influencing outcome were the delay in treatment severity of duodenal injury and the presence of associated pancreatic injury. Patients treated within the first 24 hours had a 5% mortality rate in contrast to those treated later with a 65% mortality rate.

Among those cases reported in the literature Yajko[21] found rupture of the stomach is followed by a 35% death rate. Lim et al[12] noted the high death rate of 63% among 32 injuries of the abdominal aorta.

Within recent years, the management of renal trauma has become very conservative with decreasing numbers of cases where exploration of a ruptured kidney was indicated. When fracture has been extensive, a heminephrectomy has been necessary. Conservation of renal tissue has been the rule. The uncommon injury of renal vascular pedicle injury following blunt abdominal trauma has been reported.[16]

Brosman and Fay[4] noted that urinary bladder injury occured in 86% of cases following blunt trauma with associated fracture of the pelvis. Death did not occur following surgical repair.

Following blunt trauma the diaphragm may be ruptured. McCune[15] noted that there was a 22% post-postoperative mortality rate due to the multiple injuries.

## CONCLUSIONS:

The type of injuries seen during this study have been predominately those produced by blunt vehicluar trauma. The next most common cause of abdominal injury is penetration due to stabbing or gunshot wound. Recreational activities with falls and blows to the abdomen are the less common causes of damage.

The complexity of the injuries has increased during the period of this study. A greater variety of postoperative complications have been observed. Patients are now arriving alive at the hospital with extensive injuries that would have produced death before arrival in the past. The management of frequently fatal crushing chest injuries has been greatly improved with the use of the volume ventilator and careful monitoring of the arterial blood gases. The use of the intensive care unit has improved the care rendered to the injured patients. While the overall mortality rate has not declined when compared to the previous study from this hospital it does represent acceptable results of treatment of more varied and complex problems.

A decline in the number of negative exploratory laparotomies is desirable, yet a certain number of these operations must be accepted rather than overlook the diagnosis and treatment of a potentially fatal problem. Delay in diagnosis has increased morbidity and mortality in some cases in this series. Morbidity and mortality rates following negative exploration of the abdomen are low. The vagaries of blunt abdominal injury must be borne in mind when the surgeon pursues the circumspect management of this problem.

Abdominal injuries associated with multiple body injuries represent problems of significantly higher risk of fatality. When the intraperitoneal injury is multiple the postoperative morbidity and mortality is higher. Because of these higher morbidity and mortality rates it is essential that the care of the multiple injured patient be one of priorities in resuscitation, recognition of injuries and prompt repair of injuries.

Whenever possible the care of the multiple injured patient should be a team effort. The team captain should be knowledgeable in all areas of trauma and capable of utilizing the available consultants at the appropriate time in the chain of events that occurs after the patient enters the emergency department. Often the interrelated problems require simultaneous care by physicians who have different areas of expertise. The patient should not be subdivided by those physicians interested in a particular system or geographic area of the body with no broad overview of the entire patient and problem. This ideal hinges upon the availability of care. It is this author's opinion that a general surgeon skilled in the care of trauma should be the team captain whenever possible.

The cases presented in this study were cared for by general surgeons skilled in the care of the multiple injured patient. Consultations and assistance were often sought. Acceptable morbidity and mortality rates following surgical treatment of abdominal injuries in a small hospital were obtained.

## SUMMARY:

1. An analysis of 120 cases of abdominal injuries treated surgically in the Flagstaff Community Hospital from 5/1/67 to 1/1/77 was done. This study was compared to a similar study done from 8/1/56 to 5/1/67 by this same author. The incidence of negative abdominal explorations remains at 9% in both series of cases. The postoperative death rate overall is 9% in both series of cases. The earlier series of cases was a personal experience of the author while the latter series is an experience of the author and three additional general surgeons.
2. The causes of morbidity and mortality are summarized. Delay in the treatment was associated with a higher percentage of complications, prolonged stay in the hospital and death than those patients treated within 24 hours of admission to the hospital. Among the postoperative deaths, nine arrived in the emergency department in shock. All deaths followed a vehicular accident producing multiple injuries and blunt abdominal trauma. Seven deaths occured within 48 hours of admission to the hospital and four occured after 14 days of hospitalization. Seven of the deaths were associated with cardiopulmonary failure and four were associated with hemorrhage.
3. The mortality and morbidity statistics from selected references are cited.
4. The prompt resuscitation of the patient, recognition of the injuries and repair of the injuries are the cornerstones of care for abdominal injuries.

Patients with multiple injuries have complex treatment problems that require a team approach to their care. The team captain should be a general surgeon, skilled in the field of trauma.

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*Special Article*

# The American Cancer Society: Arizona Division

Arnold A. Lilien, M.D.

**EDITOR'S NOTE:**

**The American Cancer Society (ACS) helps patients from Arizona in a multitude of ways, some of which are unknown to many physicians. In this issue of *ARIZONA MEDICINE*, I have asked Dr. Arnold Lilien, who is President of the Pima County Unit of the ACS, to describe the broad range of ACS programs which directly or indirectly benefit Arizonans.**

The immediate goal of the American Cancer Society (ACS) is to save lives and reduce suffering from cancer. To implement these goals, the ACS is organized into five standing committees: Public Education, Public Information, Crusade, Professional Education, and Service and Rehabilitation. The latter two divisions are of the most interest to the practicing physician. This article will review and update the services they provide.

## I. The Professional Education Committee

The Professional Education Committee attempts to bring pertinent new information to health care providers. Considering the busy practitioner's schedule, this is no easy task. Accordingly, the approach has been to disseminate information using a variety of techniques (see Table I).

1) **CA - A Journal for Clinicians** is published by the ACS every other month. It is provided free to members of the medical and dental professions. The featured articles, departments, and abstracts all provide up-to-date infor-

**Table I**
**American Cancer Society — Professional Education Activities**

1. Ca — A Journal for Clinicians*
2. Professional Education Materials:
   a) Literature b) Films
3. Cancer Facts and Figures
4. Annual International Cancer Conferences
5. "Lunch Time" Seminars
6. Postgraduate courses
7. Lay education "talks"

* This can be sent to you without charge by contacting your nearest ACS office.

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From: 2222 N. Craycroft Rd., Ste. 1E, Tucson, AZ 85712.

**Table II**
**Estimated Number of New Cancer Cases and Cancer Deaths in 1977 for the State of Arizona**

**Disease Site**

| | Total | Breast | Colon-Rectum | Lung | Oral | Uterus* Invasive | Prostate | Stomach | Pancreas | Leukemia |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of New Cases* | 5800 | 600 | 600 | 860 | 175 | 350 | 500 | 150 | 200 | 150 |
| Number of Deaths* | 3600 | 250 | 325 | 800 | 70 | 50 | 175 | 125 | 160 | 125 |

(Death rate per 100,000 = 150)

*Excludes squamous cell carcinoma of the skin and carcinoma in situ of cervix.

mation designed to keep the practitioner current.

2) There is an extensive list of professional education material on cancer which can be obtained through the local ACS offices. All literature is available free of charge and films are loaned free upon request.

3) **Cancer Facts and Figures** is a compendium of statistical data broken down by disease site, sex, and state. It is published yearly by the ACS. Table II is an excerpt describing the estimated new cancer cases and estimated cancer deaths in Arizona for 1977. The accompanying text stresses early detection and outlines high-risk categories for particular types of cancer.

4) The Professional Education Committee along with the Division of Oncology and Radiation at Good Samaritan Hospital, Phoenix, co-sponsored an "International Conference on Integrated Cancer Management" in February 1976. Three hundred and fifty physicians attended the conference at the Adams Hotel in Phoenix. The Professional Education Committee along with the Cancer Center Division, University of Arizona, co-sponsored an "International Conference on the Adjuvant Therapy of Cancer" in March 1977. Over 700 professionals attended the conference at the Doubletree Inn in Tucson. This International Cancer Conference format, which has proven so successful, will be made an annual event, alternating sites yearly between Phoenix and Tucson.

5) **"Lunch time" seminars** refers to the practice of arranging educational sessions at local hospitals (usually at noon). A specialist presents an up-to-date review of cancer advances in his area of competence. For example, gynecologists, medical oncologists, radiologists, and pathologists from Tucson have visited Ajo, Safford, Willcox, and Douglas. A call to the Division or District ACS office will identify the present Professional Education Chairman in your area. He will be pleased to arrange a "lunch time" program at your hospital.

6) Postgraduate courses in conjunction with the University of Arizona, Good Samaritan Hospital, etc., have allowed Arizona professionals to receive Continuing Medical Education (CME) credits.

7) Educational talks for the lay public are arranged by the ACS for local groups. A movie is usually shown and a physician is available to answer questions. Everyone, including the professional, becomes better educated.

## II. The Service and Rehabilitation Program

The Service and Rehabilitation Program is attempting to improve the quality of life of cancer patients and their families. Table III outlines the basic service policies of the ACS. Note that the first policy makes physician approval mandatory. Table IV outlines the standard service and rehabilitation programs available in Arizona.

The following services (according to number in Table IV) are available:

1) Transportation to and from a treatment center is provided for cancer patients who are considered medically indigent. Patients are usually transported by a volunteer in his private automobile, or when this is unavailable, by taxi or bus. In the case of a long trip the ACS can help defray the expense.

2) Included in the "loan closet" are the following: hospital bed with mattress and siderails, wheelchair with leg rest, walk aids, bed pans and urinals, commode, and over-the-bed tables. These items may be kept as long as needed.

3) Dressings, sterile and unsterile, are provided according to physician specifications.

4), 5), and 6) These rehabilitation programs provide assistance in restoring the patient to a useful role in society. They assist the patient in the purchase of prosthetic devices. Financial assistance is available only if no other resources can be found. Each of these three major programs brings to the bedside people who have overcome similar hardships. Pamphlets related to mastectomy, laryngectomy, and ostomy are not given directly to patients, but rather are supplied to physicians for their use with their patients.

7) The room and board service provides financial assistance when needed for non-hospitalized patients, who, in order to receive treatment, must live

**Table III**
**Basic Service Policies of Arizona American Cancer Society**

1. PHYSICIAN'S APPROVAL REQUIRED
   No service can be provided to a patient without the knowledge and approval of the patient's physician.
2. WHO QUALIFIES FOR ASSISTANCE
   Any cancer patient who is "medically indigent" (i.e., who is unable to pay for necessary medical care, but does not qualify for needed assistance through Federal, State, or County assistance programs). Services which do not entail expenditure of Society funds may be provided to any cancer patient.
3. ANONYMOUS SERVICE
   Services can be provided anonymously for patients whose physicians prefer they not be aware of their diagnosis.
4. NO PAYMENT OF MEDICAL BILLS
   No funds can be provided for payment of hospital or doctor bills.
5. SERVICES PROVIDED TO OUT-PATIENTS ONLY
   With the exception of some phases of our Rehabilitation Program, no services shall be provided to patients while in the hospital.
6. NO DUPLICATION OF SERVICES
   The ACS endeavors not to duplicate any service already available in the community.
7. PAYMENT FOR SERVICES
   No payment for services may be made on bills incurred **prior** to the date of the original Service Request.

**Table IV**
**American Cancer Society Service and Rehabilitation Programs in Arizona**

1. Transportation
2. Sick room supply "loan closet"
3. Dressings
4. Reach-to-Recovery (mastectomy patients)
5. Ostomy training
6. Laryngectomy training
7. Room and board
8. Counseling
9. Information and referral

away from home. Payment is limited to $150 per fiscal year.

8) The most recent addition to services provided by the ACS is counseling for cancer patients and their families. In Pima County, a one-year pilot project designed to counsel, support, and sustain patients and families whose lives have been disrupted by cancer is in progress. The program is flexible according to the needs presented in each individual case.

9) Finally, the ACS serves as a referral source. Patients with cancer who may not know where to receive help are referred to appropriate sources.

**III. The Public Education and Public Information Committees**

These two committees are vital components of the ACS story. Many devoted selfless volunteers spend countless hours in an effort to achieve the goal of increasing individual awareness, thereby enhancing self-protection against cancer. The messages are familiar to all of us - breast self examination, yearly Pap smear, hazards of smoking, seven danger signals, etc. These endeavors assist us in upgrading the quality of our medicine in Arizona.

**IV. Crusade**

The yearly Crusade brings in many dollars used to finance the previously mentioned programs. In addition, by supporting and fostering both basic and clinical research, it furthers the long-range goal of the ACS, which is to abolish cancer as a disease entity. The Breast Cancer Detection Project is funded in part by national ACS funds, in part by Arizona Division funds, and in part by National Cancer Institute funds. Both basic and clinical research projects at the University of Arizona Health Sciences Center are supported by ACS funds. More monies than are collected in Arizona are returned to this state in funding the projects described herein. **The administrative cost of running the ACS is less than 15% of collected funds.**

In summary, the ACS counter attacks cancer, a multi-faceted disease, using a broad-spectrum approach. A basic precept is to assist you, the practicing physician, to control cancer. Any involvement or contribution, at any level, is welcomed.

# Medicine In Mexico — III Drugs

Charles C. Daschbach and
Robin J. Connolly[1]

The drug industry in Mexico, and in all of Latin America, is dominated by subsidiaries of the large pharmaceutical companies in industrialized nations. Because Mexico has no proprietary law allowing for the recovery of developmental costs, the market is inundated with trade names competing for sales of each generic drug. Diazepam for example is sold under 42 different names, acetaminophen under 50 names and ampicillin under 110 different trademarks.

Drug laws fall under the jurisdiction of the Secretariat for Public Health and Assistance and are difficult to enforce. The Department mandates that the sale of all medication require a physician's prescription, yet it is not difficult to purchase most drugs by giving the drug name to a pharmacist. In fact, the pharmacist will often aid in the diagnosis of a customer's complaint and suggest a drug himself. Ironically, the most strictly enforced aspect of the pharmaceutical industry also takes place in the local pharmacy with rigid adherence to government regulated prices.

A recently published book (The Drugging of the Americas by Milton Silverman, University of California Press, Berkeley, 1976) has caused considerable discussion among medical students, pharmacists and doctors. Among many issues it questions the moral obligations of the multinational drug companies with respect to accurate advertisment of contraindications. Currently, Mexican law permits liberal testing of experimental drugs and many of the most widely prescribed drugs carry stronger contraindications in the industrialized countries.

Table 1 lists the top twenty-five most prescribed and sold drugs in Mexico for 1974. The representation of antibiotics is indicative of the high incidence of infectious disease. While most of the trade or generic names are familiar to American physicians, several drugs are not found in the American PDR.

**Table 1. The top 25 most prescribed and sold drugs in Mexico, 1974**[1]

| Registered Name | Generic Name | Manufacturer |
|---|---|---|
| 1. Lincocin | lincomycin | Upjohn |
| 2. Terramicina | terramycin | Pfizer |
| 3. Pentrexyl | ampicillin | Bristol |
| 4. Binotal | ampicillin | Bayer |
| 5. Garamicina | gentamicin | Scheramex |
| 6. Penbritin | ampicillin | Aguisa |
| 7. Valium | diazepam | Roche |
| 8. Ilosone | erythromycin | Lilly |
| 9. Flagyl | metronidazole | Rhodia |
| 10. Pantomicina | erythromycin | Abbott |
| 11. Prodolina | dipyrone | Promeco |
| 12. Chloromycetin | chloramphenicol | Parke Davis |
| 13. Rifadin | rifampicin | Lepetit |
| 14. Perlutal | progesterone/estradiol | Promeco |
| 15. Pedialyte | (electrolytic solution) | Abbott |
| 16. Bactrim | trimethoprim/ sulfamethoxazole | Roche |
| 17. Aderogyl 15 | vitamins A and D | Roussel |
| 18. Graneodin Benz. | neomycin | Squibb |
| 19. Ativan | lorazepam | Wyeth-Vales |
| 20. Neo-Melubrina | dipyrone | Hoechst |
| 21. Tanderil | Oxyphenbutazone | Ciba-Geigy |
| 22. Lasix | furosemide | Hoechst |
| 23. Penprocilina | penicillin G. Proc. | Lakeside |
| 24. Triduralta | cobinamide dihydroxide | Merck Sharp |
| 25. Keflex | cephalexin | Lilly |

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[1] From: Third Semester medical students at the Autonomous University of Guadalajara. Address reprint requests to Mr. Daschbach, c/o 1101 S. Lehigh Dr., Tucson, AZ 85710.

Prodolina (no. 11) and Neo-Melubrina (no. 20) are pyrazolone derivatives widely used for their powerful analgesic properties. The unusually high risk of agranulocytosis with these dipyrone salts, and the strong contraindications for oxyphenbutazone (Tanderil, no. 21) have been extensively publicized by the Secretariat of Public Health. In spite of this little has been done to reduce their popularity. Lorazepam (Ativan, no. 19) is a benzodiazepine tranquilizer/sedative which is still under investigational status in the United States. Vitamins (Aderogyl, no. 17 and Triduralta, no. 24) are widely prescribed in Mexico with avitaminosis and anaemias the 12th and 13th leading causes of mortality.

Flagyl (no. 9) leads a list of over 150 trademarks prescribed for amebiasis and parasitosis. Iodinated quinolines (Diodoquin, Entero-Vioformo, Amebal, Flagenase) which are no longer available in the United States (following an epidemic of subacute myelo-optic neuropathy in Japan) are commonly sold. Also prescribed are arsenicals (Carbarsone, Gliarsen, Wintodon) and cloroquines (Plaquinol, Aralen, Ucequin). A sulfonyl derivative of metronidazole, tinidiazole (Fasigyn, Tinidex, Trinigyn) is rapidly gaining in popularity for amebic diagnoses.

Perhaps most unfamiliar to American health professionals are the many antiviral drugs used in Mexico. Inosiplex (Isoprinosine, Omitrocin, Pranosina) is widely prescribed for herpes zoster, infectious hepatitis, measles, chicken pox and influenza. It is known that inosiplex acts not as an antimetabolite, but rather as an immunostimulant against both RNA and DNA viruses. Guanidine derivatives (Virubac, Quanum) are used for picornaviruses. Also available are synthetic nucleosides such as ribavirin (Vilona) and many derivatives of amantadine (Virmerz).

In general, the drug arena in Mexico is crowded with a constellation of drugs and their derivatives. This complexity is compounded by liberal and restrictive laws, traditions and moral issues. These are consequences of a transitional period of rapid economic growth which is being felt by all of Mexico and particularly her health delivery system.

SPECIAL NOTE: If you have difficulty in identifying a drug from Mexico or Latin America, the Reference Department at the University of Arizona College of Medicine, (602) 882-6241 keeps copies of the Mexican PDR and the Mexican Pharmacopeia and is willing to assist your search.

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U. of A.
Grand Rounds

# Obesity, Hypoventilation And The "Pickwickian" Syndrome

Faysal M. Hasan, M.D.
Sammy Campbell, M.D.

The combination of obesity and hypoventilation has been recognized for more than twenty years, and is frequently associated with cardio-pulmonary disability [1]. In recent years, however, it has become evident that there is a poor correlation between the degree of obesity and the occurence of hypoventilation, and only a small minority of patients with extreme obesity exhibit alveolar hypoventilation [2]. The aim of this paper is to discuss the pathogenesis of carbon dioxide retention in obese patients and describe the clinical features and management of the "Pickwickian" Syndrome that ensues.

### Cardiopulmonary Effects of Obesity

To understand why obese patients may be especially prone to develop hypoventilation, it is necessary to examine the effects obesity has on cardiopulmonary function [3]. The excessive body mass of the obese leads to an increased oxygen consumption and carbon dioxide production, requiring a need to increase alveolar ventilation and cardiac stroke volume. The increased weight on the chest leads to reduction in compliance of extrapulmonary structures. The compliance of the lung may also be decreased due to increased pulmonary blood volume and closure of small airway. The combined effect of decreased compliance of the lung and chest wall and increased alveolar ventilation result in a significant increase in the work of breathing. During exercise, the increments in oxygen consumption, ventilation and cardiac output are greater than those for the non-obese individual. Obese patients decrease their work by breathing at lower lung volumes. This results in a diminished expiratory reserve volume and total lung capacity. Arterial hypoxemia is usually present in massively obese patients. The hypoxemia is predominantly due to ventilation-perfusion abnormalities resulting from shallow breathing and closure of dependent airways. These alterations in lung compliance, respiratory pattern and ventilation-perfusion abnormalities are accentuated in the recumbent position. The increased requirements for alveolar ventilation and work of breathing represent a significant burden to the respiratory control system, and it is quite remarkable that the majority of obese patients meet the challenge, and only few hypoventilate.

### Hypoventilation and Control of Ventilation

Carbon dioxide elimination, a major physiologic role of the lung, is a function of the level of alveolar ventilation. Effective alveolar ventilation is directly related to $CO_2$ production ($VCO_2$), and inversely proportional to arterial carbon dioxide tension ($PaCO_2$). Therefore, alveolar hypoventilation is defined as an $PaCO_2$ higher than 46 mm Hg, and measurements of $PaCO_2$ are the best means of assessing the adequacy of alveolar ventilation.

In normal subjects the extremely sensitive control system is oriented primarily toward maintaining alveolar ventilation at a level sufficient to keep $PaCO_2$ at about 40±4mm Hg. In the absence of intrinsic pulmonary abnormalities, this level of ventilation will also maintain normal arterial oxygen tension and saturation. To establish this control, a host of stimulus-response feedback mechanisms are coordinated by the respiratory center in the medulla. The primary stimulus in the chemical control of ventilation seems to be carbon dioxide, and its site of action is on central chemoeceptors. With the rapid diffusion of $CO_2$, any change in $PaCO_2$ is immediately reflected by changes in cerebrospinal fluid hydrogen ion resulting in alteration in the level of ventilation by stimulating respiratory muscles (intercostals and diaphragm). The ventilatory response to changes in $PaCO_2$ is brisk and will be discussed (Vide Infra).

The medullary respiratory center appears to tolerate a higher than normal $PaCO_2$ during sleep, and the sensitivity of the respiratory center may be diminished in patient with chronic hypercapnia. In these patients the ventilatory drive is dependent on the degree of hypoxemia, and the peripheral chemoreceptors, located in the highly vascular carotid and aortic bodies, play an important role in the chemical control of

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From: Division of Respiratory Sciences, U of A Health Sciences Center, Tucson, AZ 85724. (Dr. Hasan). The Veteran's Administration Hospital, Tucson, AZ 85724 (Dr. Campbell).

ventilation. Thus, the hypoxic drive to ventilation may be playing a dominant role in disease states with chronic hypercapnia.

**Assessment of Respiratory Control**

The ventilatory response to hypercapnia is the most commonly used test of the respiratory control. The minute ventilation ($V_E$) is measured as the subject breathes increasingly higher concentration of carbon dioxide. Although the range of normal response is wide, ventilation usually increases by approximately 2.5 liters/minute for every 1 mm Hg rise in $PaCO_2$. A ventilatory response of less than 1 liter/minute is considered abnormal. The ventilatory response to hypercapnia is influenced by various extrinsic factors including medications. The response is augmented by the ingestion of salicylates and progesterone and attenuated by the administration of narcotic agents. The ventilatory response to hypoxia, i.e., on arterial oxygenation ($PaO_2$) less than 40mm Hg, can also be measured [4]. Since this response is usually hyperbolic, the symbol "A", a function of the change of the slope, is used to represent the hypoxic response (Figure 1). A value of A which is 125 or below represents an abnormal hypoxic response.

It is important to remember that decreases in alveolar ventilation do not necessarily reflect abnormalities in the respiratory center, and ventilatory response to hypercapnia and hypoxia can be abnormal in the presence of a normal respiratory center. Airway obstruction and chest wall loading have both shown to attenuate the ventilatory response to hypercapniac and hypoxic stimuli. Thus, the presence of obesity can make the interpretation of tests of respiratory control system extremely difficult. Mouth occlusion pressure has been recently offered as a method that permits an assessment of the respiratory response to various stimuli that is independent of alterations of lung mechanics [5]. While the patient is breathing a high concentration of carbon dioxide the inspiratory circuit is occluded. The inspiratory pressure generated during the first 0.1 second ($P_{0.1}$) is related logarithmically to the alveolar carbon dioxide tension. At this time the range of normal response for this test has not yet been established. Although it has been claimed that the occlusion pressure response is unaltered by changes in lung and chest wall compliance or in airway resistance, there are recent data indicating that it may be decreased with expiratory but not inspiratory flow resistance [6].

**The Pickwickian Syndrome**

The association of obesity and somnolence has been noted in the English literature long before the medical syndrome was described in 1955 [1, 2] and because these patients resemble a character in Charles Dickens' "papers of the Pickwick club", the term Pickwickian has been applied to this syndrome [1, 7].

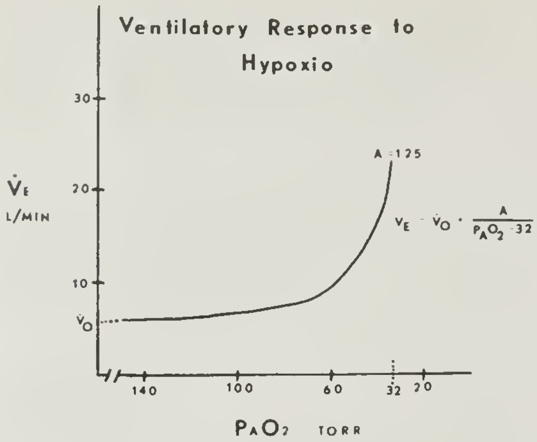

**Figure 1 —**

**Normal ventilatory response to hypoxia. The higher the value for A, the greater the hypoxic ventilatory drive. $V_E$ = expired minute ventilation; $PaO_2$ = alveolar oxygen tension; VO = the asymptote for ventilation obtained by extrapolation.**

The clinical features of the Pickwickian syndrome include obesity, alveolar hypoventilation, somnolence, periodic breathing, cyanosis, secondary erythrocytosis and right heart failure. Obesity is usually massive, antedates the onset of other features of syndrome by 5 years, and is associated with a recent history of weight gain. There is a marked male preponderance, raising the possibility that hormonal factors may protect females from development of hypoventilation. The increase in $O_2$ consumption, $CO_2$ production and decreased chest wall compliance result in increased work of breathing and some obese patients opt to work less by resetting their threshold for ventilatory responsiveness at a higher $PaCO_2$. Patients often complain of somnolence that significantly interferes with their daily activities. Hypoxemia in these patients is secondary to hypercapnia and ventilation-perfusion abnormalities, resulting in secondary polycythemia, cyanosis, development of pulmonary hypertension and right heart failure. Physiological studies have uncovered left ventricular dysfunction in these patients as well. In the original descriptions somnolence was thought to be due to hypercapnia, and little attention was given to the periodic breathing demonstrated by many of these patients.

Earlier studies showed that only 10 percent of obese patients hypoventilate, and the question was raised as to why does hypoventilation occur only in a small percent of the obese population. The most accepted theory was that since the normal range of the central chemoreceptor response to $CO_2$ varies widely, the Pickwickian represented a patient on the lower limits of the normal range of responsiveness, who hypoventilated in the presence of increased chest wall loading. On the other hand, Rochester et.al. have shown that the compliance of both chest wall and lung is more strikingly reduced in Pickwickians than in patients with simple obesity [8]. Moreover, the work of breathing was highest in these who hypoventilate. The implications are that mechanical loads imposed on breathing are greater in Pickwickians and are capable of attentuating the ventilatory responsiveness to hypercapnia. These theories were supported by the fact that more than half the patients with obesity and hypoventilation showed significant improvement in lung volumes and gas tensions with weight reduction.

However, a sizable portion did not respond to weight reduction, and in these patients one has to assume that hypoventilation was not due to obesity per se, but there was a primary decrease in ventilatory responsiveness to $CO_2$ as well. The possibility has been raised that a hypothalamic lesion may be responsible for the hyperphagia and obesity as well as the depression of ventilatory drive.

The mechanism of periodic breathing and somnolence in the Pickwickian syndrome remained unclear until a decade ago, when physiologists interested in sleep disorders described the sleep apnea syndromes. It has become clear since then that somnolence results largely from sleep deprivation explained by documented nocturnal apneic episodes [9]. Apnea is here defined as cessation of airflow at the nose or mouth for at least 10 seconds. "Upper airway apnea" implies cessation of flow in the presence of respiratory effort and is due to upper airway obstruction. If the respiratory movements are absent, the apnea is "central" in origin. These periodic apnea problems represent variants of the Pickwickian Syndrome.

**Viariants of Pickwickian Syndrome**

Variants of pickwickian syndrom should be considered whenever one i encountered by the presentation of somnolence, hypoventilation, polycythemi and cor pulmonale; with or withou obesity. These variants include: Intermittent upper airway obstruction, intermittent or chronic central hypoventilatio and occult neuromuscular disorders.

a.) **Upper Airway Obstruction** has bee described in obese somnolent patient who give a history of snoring and chokin while asleep [10]. Upper airway obstruction has been thought to be secondary t short stocky neck, hypotonia of so palate, micrognathia and enlarged adenoids and tonsils. "Upper airway apnea documented during sleep results in slee deprivation and daytime somnolenc which is dramatically relieved with th relief of obstruction by placing patient i he prone position, tonsillectomy, intubaion, or tracheostomy.

b. **Central Hypoventilation** due to malunction of central chemoreceptor may ead to chronic hypercapnia and hypoxemia, somnolence, polycythemia and ight heart failure but without dyspnea. n the absence of obesity, the syndrome ias also been labelled "Ondine's Curse."[11] Characteristically, standard lung function ests are normal. When patients are voluntarily hyperventilated, the CO2 and oxygen tensions return to normal. In about half the patients there is evidence of a neurological disease, mostly commonly a history of encephalitis or findings of Parkinson's disease.

Central hypoventilation may be intermittently present only during sleep. These patients are said to have "sleep apneas", and they average 200-500 apneic episodes per night, each lasting 25-30 econds. They give history of loud pharyngeal snores, abnormal movements durng sleep (flapping tremors, violent erks), somnambulism, enuresis and morning headaches. Obviously these patients will not benefit from intubation, and there is a belief that this may repreent an early stage in the course of the Pickwickian Syndrome.

c. **Neuromuscular disorders** should be ruled out whenever the clinical picture of Pickwickian Syndrome is described [12] . A clinical clue for evidence of muscular weakness maybe provided by the inability to decrease $PaCO_2$ by voluntary hyperventilation. If the diaphragm is paralyzed or weak, there may be a paradoxical movement of the diaphragm (inward) during inspiration. Fluoroscope examination is not reliable, and measurements of transdiaphragmatic pressure provide a better means of assessing diaphragmatic function. A Pickwickian-like syndrome has been described with myotonic dystrophy, acid maltase deficiency myopathy and proximal muscle myopathy. The muscular disorders may be occult, involving the diaphragm before the overall clinical picture makes the diagnosis obvious.

**Management of Pickwickian Syndrome**

Weight reduction to decrease chest wall load should be helpful, especially in patients with no intrinsic disease of the respiratory center. Unfortunately, the results of weight reduction programs have been disappointing. Prophylactic anticoagulation has been strongly advocated lately with the recent reports of high incidence of thromboembolic disease and sudden death in this group of patients [13], [14] . Too much emphasis has been placed on hazards of oxygen supplement in patients with hypoventilation. The dangers of hypoxemia, certainly outweigh the risks of further $CO_2$ retention, especially if arterial gas tensions are closely monitored. Both digitalis and diuretics are indicated since there is evidence of both right and left ventricular dysfunction. Attention should be given to relief any airway obstruction which may be present by providing adequate hydration, bronchodilators, chest physiotherapy, antibiotics, and intubation. If there is a history of loud snoring and choking at night, one has to look for physiological evidence of "upper airway" or "central" apnea. Upper airway obstruction can be relieved by, intubation. Recent interest has reemerged in the use of respiratory stimulants, and good results have been reported with sublingual progestrone. [15] Thyroxin has been used, along with aminophylline in few reported cases with "central apnea". There is also recent data that suggest that fasting or giving a diet of 400 Kcal/ per day as protein only, may induce enough ketosis to improve respiratory center responsiveness and arterial $PaO_2$ and lower $PaCO_2$ [16] . Lastly, remote stimulation of phrenic nerve by radio-frequency waves has proven successful in decreasing the hypercapnia in sporadic cases [17] . However, aspiration and perineural fibrosis remain unresolved problems with prolonged electrophrenic respiration.

Our present understanding of the association of obesity and hypoventilation is summarized in Figure 2. Briefly, obesity may predispose to hypoventilation and development of Pickwickian Syndrome in a small portion of the population. A subgroup will respond to weight reduction, and hypoventilation in these patients is due primarily to chest wall loading. The non-responders probably reflect intrinsic disease, either in the ventilatory system (e.g., upper airway obstruction or neuromuscular disorders) or in the respiratory center. Management should be directed to the treatment of the cardiorespiratory effects of obesity as well as to the various underlying causes of apnea, hypoventilation and somnolence.

Relationship Between Obesity and Hypoventilation

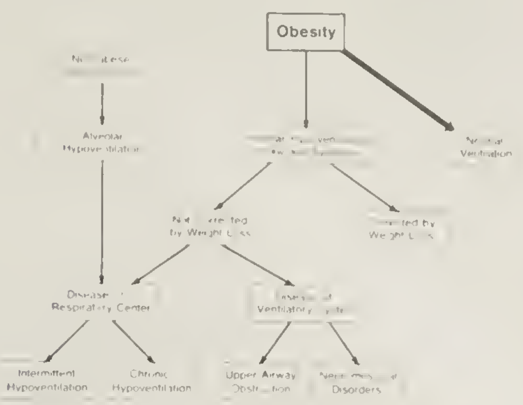

**Figure 2 —**

**Schematic diagram of the relationship of obesity, hypoventilation and the "Pickwickian" Syndrome.**

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# Health Care: The Undeserved And Overcharged

"Health Care: The Undeserved and Overcharged" was the title of a Conference sponsored by the Committee for National Health Insurance which was held June 16th in Washington, D.C. Over 400 people from across the nation attended this health conference which was chaired by Leonard Woodcock, immediate past president of the United Auto Workers. Speakers at the Conference included Senator Edward M. Kennedy (Mass.) and Congressman James C. Corman (Calif.).

According to the **Union Farmer:** "A delegation from the Conference, also called a citizen's hearing, met at the White House with President Jimmy Carter. During the visit, Carter reaffirmed his strong support of a National Health insurance and said he would submit a comprehensive health plan to Congress next year."

Other notable quotations from the same Union publication proclaim:

"Despite the ever-increasing cost of health services and private insurance, the United States will remain an international disgrace in terms of infant mortality and longevity unless there are basic changes in the system. Every modern industrial nation in the world operates a National Health Insurance (NHI) system, and in every instance NHI has improved health conditions at reasonable cost. Canada's national health plan which provides health services to 99 per cent of her citizens on an efficient, planned basis, offers a sterling example. National Health Insurance, to most people, indicates a program providing complete health services - as a right - to all citizens."

"Special interest bills, notably those endorsed by the American Medical Association, Health Insurance-Associations of America, and American Hospital Associations are all variations on a theme of high cost and poor service. Among the many national health insurance proposals, the Health Security bill (HR-21, S-3) stands alone as a unique and viable solution to the health care crisis."

Fellow physicians, this is the type of rhetoric that is going to begin bombarding the American public in the near future. We need to counter this by pointing out that the same Union and the same Union leaders have themselves done much to spiral health care costs through their own negotiations. Quoting George B. Morris, Jr., Vice President in charge of Industrial Relations for General Motors Corporation: "Today, an auto industry employee and his family literally have comprehensive and expensive health care coverage from the cradle to the grave. And the employee pays nothing for those coverages, except for a few minimal co-payments here and there. In 1975 General Motors Corporation's benefit plans cost us about $5,600 per employee, or about $575, for every GM car and truck sold."

Was there any input into the negotiations that resulted in the above by organized medicine or knowledgeable physicians? That's rather doubtful. Obviously it was done instead by the self-anointed, health care experts from organized labor. If their past success in the United Kingdom is any indication, their NHI will produce the tremendous over-utilization which ultimately results in under-service at an astronomical cost that amounts to over-charging. Then the Committee for National Health Insurance will have truly fulfilled the goals of its June 16th Conference to provide "Health Care: The Undeserved and Overcharged." Doctor, are we going to let them succeed?

John F. Kahle, M.D., President
Arizona Medical Association, Inc.

# A Department Of Surgery On The Move

A hallmark of an outstanding teaching nd training program in surgery is xcellence in patient management and are. Adequate numbers of patients are ecessary to provide an in-depth experence for the development of surgical rainees and medical students. All of the nembers of the Department of Surgery re deeply interested in education and esearch, but, even more importantly, hey are interested in clinical excellence nd patient care. The primary goal of the epartment of Surgery in the training of surgical house officer is to make that ndividual a highly skilled and competent urgeon. Another major goal is to provide an effective teaching program for nedical students. New teaching programs have been instituted for medical tudents, and we expect more teaching ime will be made available to surgery in he new four-year curriculum.

The research programs within the epartment are being expanded. Active rograms continue in wound healing, ollagen metabolism, and lymphology. dditional projects have been initiated in astrointestinal problems, heart and liver ransplantation, vascular disease, circulatory shock, head and neck oncology, nd intracranial microsurgery.

The Department of Surgery is very nterested in establishing close relationships with physicians and surgeons hroughout the state of Arizona. We would hope this could be accomplished by aving selected members of the Department visit communities to discuss various linical problems and to provide consultation services. In addition, seminars devoted to surgical problems will be held eriodically during the year at University Hospital. If further needs become apparent, we will explore them.

The University of Arizona Health Sciences Center is a state institution with many and diverse resources. The facilities at University Hospital are extensive and up-to-date. Every practicing physician and surgeon in the State of Arizona should feel free to call upon the Department of Surgery for assistance. The Department of Surgery is dedicated to excellence and to making the University of Arizona Health Sciences Center one of the strongest "medical centers" in the nation. We feel that this is a very realistic goal in this rapidly developing part of the Southwest, and we hope that everyone will want to play a role during this exciting phase of development.

Exciting things are happening in Surgery at the University of Arizona Health Sciences Center. The surgical faculty, at one time reduced to less than half its members, is back to full strength through the outstanding leadership of Dr. Stephen Wangensteen. Likewise, the surgical residency program is filled to capacity. The patient census on the University Hospital Surgical Service has increased significantly. Members of the Department of Surgery are now busy in teaching, research, and patient care activities, working in a unified fashion toward the goal of making the College of Medicine Department of Surgery one of the strongest in the country.

Any organization is only as strong as its personnel, and we believe the most outstanding academic surgeons in the nation have been recruited recently to the University of Arizona. Thirteen new surgeons have been added to the Department. Doctor Lawrence Norton, from the University of Colorado, is a general surgeon with a special interest in gastrointestinal problems and has been appoint-

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ed Professor of Surgery and Associate Head of the Department. Doctor Charles Putnam, also from the University of Colorado, is an expert in liver and kidney transplantation. He is Associate Professor of Surgery and Chief of Surgery at the Veterans Administration Hospital in Tucson. Doctor Hugo Villar, a general surgeon from the University of Texas at Galveston, is an expert in the field of gastrointestinal hormones and endoscopy. Doctor Wesley Moore, Professor of Surgery and a nationally recognized vascular surgeon, came from the University of California in San Francisco. Doctor Moore brought Doctor James Malone, another vascular surgeon, with him from California. Doctor Malone is the recipient of a career development award from the Veterans Administration. Doctor Jack Copeland, Associate Professor of Surgery and Chief of the Section of Cardiovascular and Thoracic Surgery, has contributed significantly to the field of heart transplantation and is from the outstanding cardiac program at Stanford University. Doctor Stanley Coulthard, from the University of Michigan, has been appointed Associate Professor of Surgery and Chief of the newly established Section of Otorhinolaryngology. Joining Doctor Coulthard is Doctor Charles Koopmann, from the University of Iowa. Doctor Philip Weinstein, a specialist in intracranial microsurgery from the University of California in San Francisco, has been appointed Chief of the Section of Neurosurgery. Doctor Thomas Stanisic and Doctor Mark Silvert are new additions to the Section of Urology, and Doctor Jeffrey Katz, a specialist in surgery of the cornea, has been added to the Section of Ophthalmology. Doctor John Hughes has been appointed Director of the Emergency Services Department.

Louis J. Kettel, M.D.
Acting Dean

# The AMA-Washington Office: What It Does And How It Functions

Physicians feel frequently that the Federal Government is far too much involved these days in their profession's and patients' destinies.

Indeed, physicians can hardly be blamed for feeling this way.

Increasingly the Congress demonstrates its preoccupation with health and medical care by tinkering with it. Congress schedules and holds hearings; debates and passes bills; and functions overall so industriously that of the 25,000 or so measures introduced into each Congress, some ten percent bear directly or indirectly on health.

Once the new laws are on the books, the administrative agencies take over the business of implementation. That means that regulations must be drafted and argued and adopted.

Neither legislation nor regulation can be ignored. As true as it is that the power to tax is the power to destroy, so the power to regulate can be the power to paralyze, to strangle, and ultimately to destroy. Intelligently drawn regulations can make poor laws workable and badly drawn regulations can make good laws unworkable.

And so the symbiotic relationship on laws that exists between the legislative and the executive branches of the Federal Government demands unremitting vigilance.

The American Medical Association exercises that vigilance, and has since 1944, through a Washington Office.

The Washington Office has a number of functions:

*It is an intelligence-gathering organization, charged with the responsibility of staying abreast of Congressional thinking, planning and action; and with maintaining an equally close vigil on the doings of the various executive departments and agencies.

*It is a podium from which to disseminate AMA thinking on a variety of subjects of concern to government — AMA agreement, disagreement, caution, modification, proposed solution, or information to lawmakers and medi alike.

*It is a mechanism for providing ser vice to legislators and administrators an on-the-spot AMA presence; a tw way conduit between those who mak and administer the laws and th medical professionals who must liv with the laws and try to make the work.

There is no perfect way for the Wash ington Office to go about its comple tasks. In consequence, neither table organization nor administration metho have remained immutable over the years Efforts to increase the effectiveness the Washington Office are always bein made.

But in general, the Office works as modestly staffed, highly specialize group of experts who serve as th extended arm of the AMA in Chicag

Today the Washington Office is a un of the Division of Public Affairs, linked closely with Chicago by tie-lines, telety and thermofax that contact is continuo throughout the working day. And ofte goes on well after the day has ended.

Under the Washington Office Direct and his deputy are these key people:

A director and four assistant directo of the Department of Congression Relations. Between them, these five me cover all 535 Members of Congress an their staffs; and work particularly close with the staffs and Members of those ke committees through which the bulk important health legislation must pass.

Each lobbyist is also assigned th responsibility of maintaining liaison wit a number of state medical societies.

The deputy director of the Washingt Office is also director of the Departme of Federal Affairs which works close with the departments and agencies of th executive branch. Within this depar ment are also two legislative attorne who research major federal legislati affecting health; attend hearings; monit the **Congressional Record** and the **Fed ral Register**) work closely with the Div on's Legislative Department back in icago; touch bases frequently with the bbyists; and help staff all meetings of e AMA's Council on Legislation.

A four-man Communications Department deals with media, covers the ashington scene for **AM News** and **AMA**, helps Congressional staffs with search or speech material, etc.

Supporting all of this broad activity is e library, which serves staff, the neral public, Congress and the Federal encies.

So much for the administrative unit: w does it work to reflect AMA policy?

First, the AMA's legislative objectives e set by its House of Delegates, usually broad policy guidelines. These guide e AMA's Council on Legislation when e time comes for it to review the many d varied issues developing in governent.

The Council then recommends to the ard of Trustees that legislation be oposed, supported, amended or oppos-. Once the Board has acted, its decions are sent to the Public Affairs ivision for appropriate action in Chicago d Washington.

It is in this way that practicing phycians' viewpoints and supporting arguents are made known to the legislative d executive branches of government.

By and large, this method has proved fective. Some AMA viewpoints are deed rejected. But many are accepted; d many more help shape compromise sitions.

The Congress usually welcomes AMA ewpoints because it recognizes that the blic cannot be well served unless all rtions of a question are carefully eighed. Thus, such independent forces organized medicine contribute to the blic weal by studying and questioning hat government does and does not do.

In summation, the AMA-Washington ffice is an important component of a mplex mechanism designed to convey e individual American physician's viewint to the Federal Government.

AMA Washington Office

## MEDICAID

Recently, you received a Medicaid provider form from the Arizona Department of Health Services. As of the date of this writing there is a conflict as to whether Medicaid will be funded by the counties as demanded by the governor or not funded at all as recommended by the counties and the legislature. As you know, all counties but Pima have rejected this proposal and are appealing the governor's demand in the courts and I'm sure you are aware that the legislature, wisely so, is on record as opposing Medicaid because of its many short comings in other states. These include fraud, failure of federal government funding, failure of the system to provide any better care than that previously provided and the extreme administrative costs. There has been no evidence to show that Medicaid has improved the delivery of medical care but there is plenty of evidence that Medicaid's costs have far surpassed the expectations of all its political proponents.

I've been asked on many occasions what I plan to do in regard to Medicaid and at this point in time, at least, I plan not to become a provider for the following reasons:

(1) Medicaid will not help me provide better medical care for my patients.

(2) Medicaid as it exists in other states has failed to prove that it is a better means of providing health care.

(3) Medicaid has proved to be costly and bureaucratic.

(4) Medicaid is subject to retroactive decisions made by government officials, which may cost the provider large sums of money and lost time.

(5) There is no evidence that sufficient funds will be available to pay the providers. In this case, the provider will most likely be asked to write off charges or reduce charges — which has reportedly been the case in California and New Jersey.

(6) When costs skyrocket, the providers (us), not the government or its officials will be accused of fraud, of overcharges and of unnecessary care, etc., (the usual trite accusations), bad planning and inefficiency by government is never incriminated!

In conclusion, I consider Medicaid to be a bad deal — for providers, patients and taxpayers.

Marvin C. Schneider, M.D., President
Arizona Academy of
Family Physicians
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## Auxiliary Highlights

Venereal disease, that universal problem which has the distinction of neither arriving nor leaving without second party assistance, cries out yet again for attention as a community problem; and Jan Lisboa has alerted Auxilians to that need through her efforts as Community Health chairman. She has relayed information to each county Auxiliary concerning the Arizona Department of Health Services' request for help from the Auxiliary in supplying resource people in each community to assist Donna Shomen, Department Coordinator of its new program for community involvement in V.D. education and control.

Objectives include informing citizens of the problem, identifying and recruiting active community involvement and support for V.D. education, and providing information to the general public and specific groups concerning signs, symptoms, treatment, and prevention of venereal disease.

Support is offered to groups willing to participate in V.D. education programs, and the objectives also seek to convince parents and school officials that there is a need for incorporating V.D. instruction in their districts.

Auxiliary members at large can be effective in their own communities to activate the statewide seven point plan designed to reduce the venereal disease statistics which show a 10% increase in gonorrhea cases reported in fiscal 1976 even with the estimated three out of four cases still going unreported to public officials.

The education and control plan of action requires commitment from effective leaders; enlistment of many supporting groups; educational presentations; encouragement of V.D. education in school instruction; convincing parents, school officials, and legislators of the need for V.D. education; utilization of media; and raising funds for special projects.

Jean (Mrs. M. W.) Phillips
Prescott (Yavapai)

## Correspondence

Editor *Arizona Medicine*

Dear Doctor Block,

This is a call for assistance by the membership of ArMA for assistance in bringing the recorded medical history of the state up to date.

In 1966 there was published by Frances Quebbemann "Medicine in Territorial Arizona." The committee was headed by Doctor Albert Brewer, one-time president of this august society; and a member of that committee was Doctor Robert S. Flinn of Phoenix — a native, or nearly so, and longtime practitioner of Phoenix. Both father and son have served as president of ArMA.

The Robert S. Flinn, M.D., Foundation has awarded a grant to the Academy of Medicine, Maricopa County Medical Society, to continue a record of Arizona Medical History beginning about 1910 where the Quebbemann work left off. The project historian will be G. Wesley Johnson, Ph.D., professor of History at the University of California, Santa Barbara, and presently completing the bicentennial history of Phoenix. Doctor Johnson is an authority on oral history techniques and plans to use this method as well as whatever archival material can be obtained.

Physicians statewide will be contacted for interviews and documentary material. Your cooperation and assistance is sought. We invite you to explore Arizona Medical Development as it suddenly exploded — with the fantastic proliferation of medical modes and techniques — from "tallow-tip to television" in the last sixty years.

Few sons have been able to provide such an "historical memorial" to their pioneer father as this proposal by Doctor Robert S. Flinn to his father Doctor John W. Flinn (1871-1944), McGill Medical College 1895, Kingman, Arizona A.T. 1898-1901, Prescott 1902 — Arizona License #40.

Sincerely,

John W. Kennedy, M.D.

## ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

### MEDICAL EDUCATION COMMITTEE

Meeting of the Medical Education Committee of the Arizona Medical Association, held Thursday, June 2, 1977, at 810 W. Bethany Home Road, Phoenix, convened at 7:10 p.m., Robert E. T. Stark, M.D., Chairman, presiding.

### NEW MEMBERS

New members of the committee who were present were introduced. These included Drs. Gold, Jacoby and Manley.

### SECTION APPOINTMENTS

Dr. Stark announced appointments to the various Sections, as follows:

**Section on Accreditation**

William F. Sheeley, M.D., Chairman
Jack E. Cook, M.D.
Francis T. Flood, M.D.
Willard S. Gold, M.D.
Robert E. Hastings, Jr., M.D.
Harry F. Lenhardt, M.D.
Charles A. Trahern, M.D.

**Section on Requirements**

Albert G. Wagner, M.D., Chairman
James E. Brady, M.D.
George E. Burdick, M.D.
David J. Crosby, M.D.
Harry W. Hale, Jr., M.D.
Robert E. T. Stark, M.D.
David C. H. Sun, M.D.

**Section on Certification**

Ashton B. Taylor, M.D., Chairman
Daniel B. Carroll, M.D.
Clive O. Deutscher, M.D.
Kenneth A. Dregseth, M.D.
W. David Jacoby, Jr., M.D.
Howard N. Kandell, M.D.
John J. Standifer, M.D.
Lawrence Z. Stern, M.D.

**Section on Graduate Medical Education**

Jack M. Layton, M.D., Chairman
Melvin L. Cohen, M.D.
George D. Comerci, M.D.
John V. Kelly, M.D.
Eric G. Ramsay, M.D.
Charles Dennis, Medical Student

### SECTION REPORTS

**Section on Accreditation**

**Phoenix Psychiatric Council**

IT WAS MOVED AND CARRIED TO RECOMMEND APPROVAL OF ACCREDITATION OF THE CONTINUING MEDICAL EDUCATION PROGRAM OF THE PHOENIX PSYCHIATRIC COUNCIL FOR A PERIOD OF TWO YEARS WITH RESURVEY AT THE END OF THAT PERIOD.

**St. Luke's Hospital Medical Center**

IT WAS MOVED AND CARRIED THAT ST. LUKE'S HOSPITAL MEDICAL CENTER BE GRANTED PROBATIONAL ACCREDITATION FOR A PERIOD OF ONE YEAR, WITH RESURVEY AT THAT TIME TO DETERMINE IF ACCREDITATION IS TO BE CONTINUED.

**Arizona Medical Association**

IT WAS MOVED AND CARRIED TO RECOMMEND ACCREDITATION OF THE ARIZONA MEDICAL ASSOCIATION'S CONTINUING MEDICAL EDUCATION PROGRAM FOR A PERIOD OF TWO YEARS, WITH RESURVEY AT THAT TIME.

**Proposed Surveys**

It was reported that re-surveys will soon be conducted of St. Joseph's Hospital and Medical Center, Phoenix, and Arizona State Hospital, as well as a survey of the Arizona Heart Institute.

**Revision of Accreditation Materials**

Dr. Hastings reported that the Section has under consideration accreditation materials from several other state associations as guidelines in planning revisions of ArMA's materials.

**Section on Certification**

Dr. Taylor reported that 1977 CME applications would soon be in the mail.

**Section on Requirements**

Dr. Wagner reported that the new CME guidelines being mailed to all Arizona physicians had been revised to bring them as closely as possible into conformation with AMA/PRA requirements, although we had retained our ability to designate individua Arizona programs for Category I.

### LIAISON COMMITTEE ON CONTINUING MEDICAL EDUCATION (L.C.C.M.E.)

Letter of 4/11/77 from AMA concerning composition of the L.C.C.M..E., and the suggestion that State Continuing Medica Education Committees try to include th same representation, was discussed. I became apparent that the ArMA committee as presently constituted, does include al except a person from the Hospital Association.

IT WAS MOVED AND CARRIED TO RECOMMEND THAT THE PRESIDENT OF ARMA APPOINT A MEMBER OF THE ARIZONA HOSPITAL ASSOCIATION TO THE MEDICAL EDUCATION COMMITTEE AS A VOTING MEMBER

It was suggested that three or four name be solicited from the Arizona Hospita Association, from which the President migh select a member for the committee.

**Conference of State CME Chairmen**

Dr. Stark reported that the subject grou will hold a pre-organizational meeting in Sa Francisco later this month during the AMA convention.

### WASHINGTON STATE MEDICAL ASSOCIATION RESOLUTION

Above Resolution concerning direct Stat representation on the L.C.C.M..E. wa received for information.

### CONTINUATION OF ACCREDITATION PROGRAM

Letter of (no date - received June 1) from the L.C.C.M.E. indicating their desire t continue the present arrangement with Stat Associations in providing support in th accreditation program with the L.C.C.M.E as has been done with the AMA in the past — received for information.

## PHYSICIAN REHABILITATION COMMITTEE

The meeting of the Physician Rehabilita- on Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona on Wednes- ay, June 29, 1977 convened at 7:12 p.m., Thomas E. Bittker, M.D., Chairman, presiding.

### GOALS

An extensive discussion ensued on the ubject of the goals of the Committee ollowed by general agreement that the ollowing would be the goals for the Committee:

a) To provide a resource not only for the impaired physician — defined as at risk to his patient by a consensus of his medical community — but also for the distressed physician and his family.

b) Designing an infra structure for dealing with the distressed physician including such issues as (a) assisting in finding appropriate psycho therapy; (b) hospitalization; (c) self help groups; (d) arranging locum tenens.

c) Develop a relationship with BOMEX that would permit us to distinguish between reportable events that would remain within the province of the Committee.

d) Develop a referral network.

e) Expand the avenues of discovery of the impaired or distressed physician so that assistance can be provided.

f) Develop a mechanism for involvement of the Auxiliary to the Arizona Medical Association in the Committee's programs and activities.

### OBJECTIVES

**Resource Development**

It was agreed that Dr. Bittker and Dr. Young would draft a letter to all Arizona physicians setting forth the plans of the Committee, including but limited to opportunity and constraints of the Committee's work, distinction between the impaired and distressed physician, immunity and confidentiality, how to make contact with Committee members, etc.

Dr. Kahle agreed to discuss the involvement of the Auxiliary in the activities of the Committee.

It was agreed that we would not actively solicit help from the County Medical Societies and Chiefs of Staff of the various hospitals until after we have proceeded further with criteria, definitions, reporting, procedures, etc.

**Confrontation Teams**

The Chairman briefly referred to the Confronter/Manager Manual prepared by the Committee on Personal Problems of Physicians of the Washington State Medical Association.

It was determined to ask each member to review the document for discussion at the next meeting.

**Record Keeping**

It was agreed that individual case records would be kept by the team assigned to each case while that case is in process. When a case is closed, the records will be returned to ArMA for permanent filing.

Dr. Bittker volunteered to assume the task of developing a system and forms for standardized reporting of cases in process, follow-up, etc. Drs. Landess and Damstra offered to assist in this task.

**Treatment Facilities**

The Chairman reviewed his letter to Richard J. Metzner, M.D. as an example of possible treatment facilities that may be available should treatment be desired outside the state. The Committee will develop additional resources of this type in the future.

**Self Help Groups**

It was agreed that Drs. Butler and Damstra would develop plans for nurturing the existing AA group for professionals and explore other aspects of self help groups.

**Surveillance/Follow-up System**

General discussion ensued on the best way to handle the problem of surveillance and follow-up of cases.

It was agreed that each county medical society should be consulted and help solicited, but the primary work would be done by the members of the Committee.

Dr. Kahle to take the lead in the northern part of the state. Dr. Scheiber to be the lead in the southern part of the state. Dr. Bittker will be the leader in the Maricopa area with the help of Dr. Butler who will handle the Tempe/Mesa area.

**Definition of "Impaired" and "Distressed" Physician**

The following suggested definitions were discussed:

**THE IMPAIRED PHYSICIAN**

1. The impaired physician is so compromized in his functioning that he jeopardizes the health of his patients and by his continuing practice in the impaired state is a threat to the integrity of the profession. When a physician's impairment is recognized by colleagues, prompt action is warranted in the form of notification of the Board of Medical Examiners so that appropriate administrative intervention can occur. In conjunction with this administrative intervention, a treatment program should be recommended, or indicated.

**THE DISTRESSED PHYSICIAN**

2. The distressed physician is one whose level of practice continues to conform to the standards endorsed within the medical professional community. On the other hand, the distressed physician does suffer from an emotional disorder, a problem of substance abuse, or a medical illness sufficient to compromise his general capacity to adapt and to render him at risk to eventual professional impairment. Such physicians should be referred to the attention of the Physician's Rehabilitation Committee for evaluation, recommendation for treatment and supportive intervention where appropriate. Referral to the Physician's Rehabilitation Committee in these cases will not require subsequent notification to the Board of Medical Examiners unless ultimate impairment emerges.

It was agreed that additional work was needed on these definitions. Dr. Butler was assigned to work on this and report back to the Committee at its next meeting.

### BOMEX

The whole relationship of this Committee with BOMEX was discussed. It was agreed that we would wait until after the definitions of impaired and distressed physician had been decided upon before approaching BOMEX for concurrence.

### CASE REVIEWS

Dr. Bittker explained the status of the original 20 cases.

It was agreed that Dr. Dexter would obtain a status report from BOMEX on the cases that had been reported to it.

IT WAS MOVED AND CARRIED THAT AFTER THE BOMEX REVIEW, EACH CASE WOULD BE ASSIGNED TO A MEMBER OF THE COMMITTEE WHO WOULD FOLLOW-UP AND REPORT BACK TO THE COMMITTEE AS TO ITS STATUS AND RECOMMENDATIONS FOR HANDLING IN THE FUTURE.

### NEXT MEETING

The next meeting of the Committee was scheduled for Saturday September 17, 1977 at 12 Noon to conclude at 3 o'clock p.m.

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## EXECUTIVE COMMITTEE OF THE ARIZONA HEALTH SERVICE CORPS

The meeting of the Executive Committee of the Arizona Health Service Corps, held at 810 West Bethany Home Road, Phoenix, Arizona, July 16, 1977, was convened at 10:00 a.m. by Chairman Frederick J. Brady, M.D.

### 7th ANNUAL RURAL HEALTH CONFERENCE

Dr. Brady reported that he had appointed Drs. Kossuth, Jensen and Norman to serve on the Planning Committee for the 7th Annual Rural Health Conference. Dr. Kossuth was presented and indicated his willingness to accept this appointment. The other two doctors were not present so no acceptance of their appointments was received at the meeting.

Dr. Nichols indicated that attempts would be made to fund the Conference through the Arizona Health Service Corps. He also pointed out that the Conference would be an ideal opportunity for health delivery groups in the state to describe what they are doing. This would be especially so for the Arizona Health Service Corps.

Dr. Brady suggested that Dr. Kossuth's concerns regarding the assessment of needs throughout the state should be incorporated into the agenda of the Conference.

### COMMITTEE MEMBER REPORTS

At the Chairman's request, Dr. Nichols reported on his schedule for the coming year which would include his sabbatical and residence in Washington, D.C. as a Health Policy Fellow of the Robert Wood Johnson Foundation.

Dr. Studt reported on his meetings with representatives of the other National Health Service Corps state contracts projects in Oklahoma and Mississippi. He also reported on a phone conversation with the National Health Service Corps contract program in Washington.

Dr. Kahle reported on the problems created for ArMA under the existing Arizona Health Service Corps contract because of the lack of a provision for operating capital. This operating capital is currently coming from ArMA but difficulties are being experienced in being reimbursed by HEW. He emphasized the importance of incorporating a provision for operating capital into next year's contract.

Mr. Morrissey reported on the trip which he, Dr. Nichols and Dr. Studt made to Washington to discuss the proposal for refunding with the Project Officer, Mrs. Shackelford, and with the Director of the National Health Service Corps, Dr. Tolbert. He emphasized the importance of full participation by the Arizona Health Service Corps staff and representatives of the ArMA Foundation in the negotiation process for the FY-78 contract.

## MINUTES

Dr. Kossuth requested that a correction be made in the minutes of the June 11th Executive Committee meeting. This correction was made and the minutes were accepted.

## LEGAL STATUS OF THE ARIZONA HEALTH SERVICE CORPS

Dr. Kossuth made reference to an issue raised in the proposal for continuation of the Arizona Health Service Corps — namely, the possibility that legal counsel might judge it appropriate for the Arizona Health Service Corps to have its own separate identity apart from that of the ArMA Foundation. He indicated that the document's statement that such separate identity was highly probable prejudged the issue. His recommendation that the word probable be changed to possible was accepted by the Committee. Mr. Morrissey indicated that in a meeting with Bruce Robinson, Mr. Robinson had outlined an agenda whereby the Arizona Health Service Corps proposal would be reviewed by legal counsel following its approval by the Arizona Health Service Corps Executive Committee, and prior to its presentation to the Board of Directors of the ArMA Foundation. Dr. Studt emphasized the importance of resolving the issue of legal identity because of the important legal ramifications of the proposed Arizona Health Service Corps activities.

## SELF-SUFFICIENCY

Dr. Kossuth raised the question of whether self-sufficiency should apply to the Arizona Health Service Corps as an organization, or to the individual physicians recruited by the Arizona Health Service Corps. The staff of the Arizona Health Service Corps supported the notion of self-sufficiency for the organization. Reference was made to the difficulty in establishing long term physician-community relations in some towns where the conditions were not conducive to attracting physicians on a long term basis. Because of this situation, the intention of the Arizona Health Service Corps would be to maintain system coverage of such towns, even if the individual physicians rotate through that town on a short term basis. Reference was made to the possibility of rural transport, and Dr. Kahle recommended that the Arizona Health Service Corps stay out of rural transport situations regardless of local demand. Dr. Marble made reference to the situation in Gila Bend and recommended that the Arizona Health Service Corps take into consideration the availability of health manpower in the vicinity of underserved areas, and not become involved in setting up programs which would compete with physicians already in an area.

## UNIVERSITY OF ARIZONA PARTICIPATION

Dr. Dexter raised the question of the support of the University of Arizona for the Arizona Health Service Corps program. Dr. Nichols pointed out that the staff of the Arizona Health Service Corps had met with Dr. DuVal, Vice President for Health Sciences at the University, and had received strong indications of support from Dr. DuVal. Dr. Dexter recommended that the extent of the University of Arizona support should be spelled out. The Committee recommended that Dr. DuVal be requested to write a letter expressing University support.

## LEGISLATIVE PARTICIPATION OF THE ARIZONA HEALTH SERVICE CORPS

Dr. Kossuth raised the question of the way in which the Arizona Health Service Corps' involvement in the development of legislation was expressed in the proposal. He expressed concern that this participation not be described in any which would jeopardize the tax exempt status of the ArMA Foundation under 501(c)(3) of the Internal Revenue Code. It was determined that the document would be reviewed and corrected where necessary to make it clear that the participation of the Arizona Health Service Corps had taken place only at the request of legislative staff and was strictly of an advisory nature.

From 1:15 p.m. until 1:45 p.m. the meeting broke for lunch.

## DETAILED REVIEW OF THE PROPOSAL FOR CONTINUED FUNDING OF THE ARIZONA HEALTH SERVICE CORPS

Dr. Brady began the second session of the meeting by recommending that the Arizona Health Service Corps undertake the responsibility for examining current methods of health care in the state of Arizona. He emphasized the need to review such things as the unnecessary duplication of hospitals and other services. He made reference to the comprehensive health planning document of the Arizona State Department of Health Services.

A page by page review of the Arizona Health Service Coprs proposal was then initiated. Several minor corrections were suggested and duly noted by the staff.

## THE LETTER FROM DR. MELICK

Following the detailed review of the document, a letter which Dr. Melick had submitted to the Executive Committee was reviewed and commented upon. A major emphasis in Dr. Melick's letter was upon the need for review of the Arizona Health Service Corps proposal by outside consultants. Dr. Studt made the observation that Dr. Melick's letter should be considered in either of two possible ways: first, that it should be taken seriously and that every effort should be made to seek the review recommended by Dr. Melick; or second, that the letter should be disregarded as irrelevant. Dr. Studt strongly recommended that the former approach be taken and that such review be sought. Mr. Morrissey pointed out that a considerable amount of outside consultation had already been sought, and that in view of the time and budgetary constraints under which the staff was operating, this consultation could be considered as having been extensive. Dr. Nichols pointed out that in view of the fact that the document would have to be presented to the Executive Committee and the Board of Directors of the ArMA Foundation within one week, any further attempts at extensive outside consultation would only serve to delay the process and prevent the Arizona Health Service Corps staff from meeting its present schedule.

Dr. Bardy recommended that the staff of the Arizona Health Service Corps make every attempt to contact all those physicians on the Executive Committee for the Arizona Health Service Corps who did not attend the meeting, in order to obtain their verbal or written comments on the proposal.

## LEVEL OF ARIZONA HEALTH SERVICE CORPS ACTIVITY

Dr. Kossuth expressed concern over the fact that the proposal was for a full scale operation. He suggested that it might be appropriate to begin at a lower level in order to develop one or two sites before expanding to a full scale operation. This issue was discussed in the meeting. Mr. Morrissey expressed the opinion that it would be important to exert maximum effort at the very beginning in order to demonstrate that an operation of the sort proposed could succeed. The Committee decided to support the proposal in its present form.

Dr. Kossuth also raised the question of the legal authority of County Supervisors to contract for health services to non-indigents. The consensus of the Committee was that this would not be a serious problem, particularly in view of the fact that local entities are now able to establish health service districts which would in fact have the right to contract for health services for anyone.

## SUMMARY

At this point Dr. Brady, the Chairman o the Executive Committee, reviewed the accomplishments of this meeting. He directed that these accomplishments be stated clearly in the minutes. They are:

1. The entire draft of the proposal was reviewed in detail page by page. Certain changes were recommended or mandated. Upon incorporation of the mandated changes, the revised document should be submitted to the Board of Directors of the ArMA Foundation, together with the recommendation of the Executive Committee of the Arizona Health Service Corps that the proposal be approved.
2. The Executive Committee of the Arizona Health Service Corps discussed thoroughly the philosophy of the proposed Arizona Health Service Corps program. and the future directions which the program would take. The Committee gave

its strong endorsement to the proposed program.

The Executive Committee discussed the importance of the Corps' having operating capital so that the ArMA Foundation would not be responsible for advancing operating funds. It was recognized that the amount of $195,000 which was included in the budget for physician's salaries, is intended to serve as such operating capital.

The Executive Committee concurred with the concerns expressed in the proposal regarding the need for legal review of the proposal. It recommended that the Board of Directors of the ArMA Foundation give high priority to securing an early legal review.

The Executive Committee discussed in detail the letter and recommendations of Dr. Melick. The staff of the Arizona Health Service Corps was directed to make every effort to contact those members of the Executive Committee who had been unable to attend the July 16th meeting in order to solicit their comments.

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## MATERNAL AND CHILD HEALTH CARE COMMITTEE

The meeting of the Maternal and Child ealth Care Committee of the Arizona ledical Association, Inc. held Saturday, uly 16, 1977, at 810 West Bethany Home oad, Phoenix, Arizona, convened at 1:31 m., William C. Scott, M.D. Chairman residing.

### Family Life Education

Dr. Scott introduced Joseph W. Hanss, ., M.D., Chairman of the Phoenix OB-YN Society Committee on Family Life ducation. Dr. Hanss informed the Comittee that the Phoenix OB-GYN Society nd determined to work with the State oard of Education and to seek Family Life ducation once again as a mandatory urriculum in the Arizona school systems. In his regard, the Committee chaired by Dr. anss met with the State Board of Education, who adopted the following resolution: In recognition of serious problems in rizona discussed by Dr. Hanss associated ith high rates of divorce, teenage pregnancy, abortion and other family problems nd also in recognition of existing policies of he State Board of Education, it was moved nd carried that the State Board of Education:

Encourage each school district in Arizona to review and study its curriculum dealing with the Family Life Education.

Encourage each school district if it has such a curriculum to update and improve its curriculum.

Encourage each school district without such a curriculum to consider adopting a curriculum of Family Life Education appropriate to the district.

Make known to each school district the existance of and offer of assist's to school district from Family Life Education Committee, Dr. Joseph W. Hanss, M.D., Chairman, 2021 North Central Avenue.

5. Establish a committee to work with the Family Life Education Committee and other in furtherance of the aims of the Family Life Education Committee.
6. Re-affirm existing state board policy that a curriculum dealing with Family Life Education is a matter to be dealt with by the local school district and should involve a high degree of parental involvement."

Dr. Hanss further informed the Committee that the Flagstaff Public School System is the only public school in the State that has an approved curriculum for Health Education, and that this was for grade 6. A copy of this curriculum is on file for review. CONSIDERABLE DISCUSSION ENSUED.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE BOARD OF DIRECTORS THAT THE ARIZONA MEDICAL ASSOCIATION ACTIVELY SUPPORT THE DEPARTMENT OF EDUCATION IN THE DEVELOPMENT OF FAMILY LIFE EDUCATION CURRICULUM, KINDERGARTEN THROUGH GRADE 12. FURTHER THAT THE ARIZONA MEDICAL ASSOCIATION ENCOURAGE EACH PHYSICIAN IN THE STATE TO BE INVOLVED WITH THEIR LOCAL SCHOOL BOARD IN SUPPORT OF THIS ENDEAVOR.

### Task Force For Maternity Care

Dr. Ehling introduced W. Sundin Applegate, M.D., Arizona Department of Health Services. Dr. Applegate reported on the first meeting of the Task Force for Maternity Care put together by the Department. This meeting was an organizational meeting during which concerns of the public were expressed. Dr. Applegate indicated that it is their hope that the Task Force will discuss alternatives to hospital deliveries and perhaps develop a central clearing house for reporting complications of non-hospital deliveries. They will continue to report on the development of the Task Force.

### Arizona Perinatal Program

**Executive Director's Report**

William J. Moore, M.D., Executive Director, Arizona Perinatal Program informed the Committee that since their last meeting an educational program has been developed which covers professional, patient and public education. The Arizona Perinatal Program acts primarily as coordinator of continuing education programs for health professionals initiated by the University's College of Medicine and Tertiary Care Centers. The program will make some innovations as demonstration projects in the areas of patient and public education.

A complete clinical record system (data base) has been developed which is both practical and useful. The system is currently being actively field tested in a number of large volume centers in the State and will be fully and widely operational by mid October.

The hallmark of perinatal data system alluded to previously is its clinical usefulness. It has been functioning just long enough to work out expected flaws in any specially designed electronic data system. A number of pilot programs are being currently tested.

A quartet of ongoing and complementary neonatal follow-up studies implemented. Three of the studies are of prospective design and reliable data not yet accessible, with the exception of neonatal and maternal discharge summaries.

A functioning Maternal Transport System, built on the model of the Arizona Premature Transport Program is in place.

A transport system for non-routine laboratory studies which eases access of the practice community, both urban and rural, to specialized lab services useful in the management of high-risk pregnancies and noenates is expected to by fully operational by mid August, 1977.

Communications. As of July 15, 1977, a single telephone number reaches either perinatologists or neonatologits at Tucson, 24 hours daily. The number is 882-6710. This "directory service" is linked with GCS mobile radio telephones which gives maximum accessibility of the physicians in the Tucson Tertiary Care Centers to health professionals seeking consultation.

In the Phoenix area, presently two access routes are operational: Tertiary Care Center Neonatologists: 258-8331; Tertiary Care Center Perinatologist: 253-1860.

Both numbers are tied to 24 hour directory services with capacity to "patch through" calls from outlying telephones directly to the physicians in the Tertiary Care Centers. Both groups of physicians also are on GCS mobile radio telephones when "on call".

**BYLAWS AMENDMENT**

The Executive Committee of the Arizona Perinatal Program voted to amend the bylaws as follows:

Article IV, Section 5. **Vacancies.** VACANCIES ON THE EXECUTIVE COMMITTEE, EXCEPT FOR MEMBERS WHO SERVE BY VIRTUE OF THEIR POSITION, SHALL BE FILLED FROM NOMINEES SUBMITTED BY THE NOMINATING COMMITTEE BY APPOINTMENT MADE BY THE CHAIRMAN OF THE EXECUTIVE COMMITTEE WITH THE APPROVAL OF THE MAJORITY OF THE EXECUTIVE COMMITTEE. SUCH APPOINTMENTS SHALL BE FOR THE UNEXPIRED PORTION OF THE TERM.

Until filled, any vacancy on the Executive Committee shall not operate to reduce the size of the Committee, but the members holding office shall at any time constitute the entire Executive Committee.

IT WAS MOVED AND CARRIED TO RATIFY THE AMENDMENT TO THE BYLAWS AS PROPOSED BY THE EXECUTIVE COMMITTEE DURING MEETING HELD APRIL 15, 1977.

**FUTURE FUNDING**

Dr. Scott presented the subject of future funding of the Perinatal Program to the Committee. It was noted that the current grant is to end in August in 1980. Should it be determined that the program should continue and especially with appropriations from the State of Arizona, an educational program should be developed for presentation to key legislative leaders in the near future to create an awareness of the program. It was reported that Ted F. Warner of the Executive Committee is chairman of a "Resource Development Committee" and that it would be appropriate to invite Mr. Warner to the next meeting of the Maternal and Child Health Care Committee to discuss future funding and develop an outline for the education of the legislature.

### Communication

The following letters were received from Drs. Fulginiti and Taussig, Department of Pediatrics, College of Medicine, directed to Mr. Robinson and considered by the Committee.

"Enclosed please find a revised letter regarding the Pediatric Transport Program which the Department of Pediatrics is trying to formalize to assist physicians throughout the State. The original letter I sent to you was presented to the Pima County Pediatric Society where changes were suggested. All the changes suggested have been incorporated in this letter which has been approved by the Pima County Pediatric Society. Thus, it is this new letter which we would like your Executive Committee to review and hopefully approve, so that we may distribute it to the physicians of the State. We thank you very much for your help in this important matter."

Sincerely,
Lynn M. Taussig, M.D.
Vincent A. Fulginiti, M.D.

Enclosure

"The success of the neonatal transport program in Arizona has demonstrated that regionalized intensive care units for newborn infants can markedly decrease the morbidity and mortality rates from serious neonatal illnesses. Because of this success, and because we have received numerous requests from physicians throughout the state to transport older children, the response of the Department of Pediatrics at the Arizona Health Sciences Center (AHSC) has been to develop a more-formalized pediatric air-transport program for seriously or critically ill infants, children, and adolescents in Arizona and surrounding states.

This program is being implemented to assist you, the primary physician, in providing optimal care for the seriously ill or injured child by offering assistance in arranging transport for those children in need of more extensive pediatric care. Our role is to provide specialized diagnostic and therapeutic services and stabilization of the critically ill patient, with return of the patient to you and the referral hospital for continued care as soon as it is feasible and safe to do so.

In most cases patients will be transported to ASHC. However, in certain cases (e.g. burn patients) or when a special request is made for a particular hospital and/or physician, the patient can be transported to Tucson Medical Center or St. Mary's Hospital.

Patients will be transported by aircraft capable of carrying isolettes and stretchers, oxygen, suction, monitoring equipment, EKG and defibrillators. Appropriately trained paramedics or nurses will fly out to accompany the patients. They will carry the necessary medications, equipment, and supplies to stabilize and treat patients during the transport.

Referral of infants, children or adolescents in need of more intensive pediatric care can be accomplished by calling (602) 882-6300. (Arizona Health Sciences Center) at any time and asking for the Pediatric Transport Coordinator. The Coordinator will then determine the availability of beds and arrange for the admission of the patient. It is the obligation of the referring physician to arrange the actual air-transport. The Coordinator will advise the referring physician of the resources available for such transports. If the referring physician encounters difficulties in arranging such transport, the Coordinator will assist in finalizing plans for the transport of the patient. In the rare instance where it may be necessary for a physician to accompany the patient during transport, it will be the obligation of the referring physician to provide such additional assistance.

Expenses incurred in the transport of any patient and in the return of the patient by plane (when necessary) to the referring physician and hospital will be billed to the patient's family or third party carrier. Likewise, in-hospital costs will be billed to the family or insurance company.

We hope this program will be of assistance to you in the care of your patients. Please do not hesitate to contact the Medical Director (Dr. Taussig — 602-882-6300) should you have any questions or desire further information."

IT WAS MOVED AND CARRIED TO RECOMMEND TO DRS. FULGINITI AND TAUSSIG THAT THE PROPOSED LETTER TO THE PHYSICIANS OF THE STATE BE REVIEWED BY THE MARICOPA COUNTY AND STATE PEDIATRIC SOCIETIES AS WELL AS THE ARIZONA ACADEMY OF FAMILY PRACTICE.

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## MEDICAL ECONOMICS COMMITTEE

The meeting of the Medical Economics Committee of the Arizona Medical Association, Inc. held Thursday, July 21, 1977 at 810 West Bethany Home Road, Phoenix, Arizona convened at 7:30 p.m., Richard W. Switzer, M.D., Chairman, presiding.

### Collective Bargaining

Dr. Switzer introduced William M. Davis, M.D., President of Professional Guild of Arizona who made the following presentation to the Committee.

"These famous quotes are familiar to us all. They serve to remind us of the natural evolution of life — a dynamic process which will, with time, change all facets of life including the practice of medicine.

I would like to propose a mechanism for the evolution of our professional economic life by the marriage of two organizations which represent the persons and feelings of Arizona physicians — The Arizona Medical Association and the Professional Guild of Arizona. There will be no rape to effect this pregnancy and offspring but, hopefully, the planned introduction of two eligible parties will establish and acquaintance which will grow into a love affair, the passion of which will spawn a new generation of vigor and value in the marketplace of medicine and yet maintain the ethnic purity of our profession.

The absence of this scenario will not result in a barren land but rather a crop of socialistic weeds, the seeds blown in by the winds of neglect and nurtured by the rains of indifference, distrust, despair and ignorance.

Success, even the continued existence of any product or service is based on a need. Medicine, according to Webster, is the science and art of preventing, alleviating and curing disease. As long as there is disease, there will be a need for science and art of medicine. Practitioners of this science and art, physicians, need to be paid for their efforts. Compensation of physicians has been undergoing an evolution during the past 20 years.

The purchase of the science and art of medicine has slowly been removed from the indivudal seeking these professional services. The services are being given on a one to one basis but are being paid for collectively by governments and by insurance companies representing groups. Nowhere is the physician being collectively represented in the medical marketplace. A brief look at this marketplace will illustrate his collective absence:

1. One third of the over 300,000 physicians in this country are employees of Federal, State and Local Governments, the VA, the Indian Health Service, The Public Health Service, Universities, HMO's, Mines and Industry and others. No one is representing them.
2. The Federal Government and others are strongly considering lumping all health service persons into one category for pay purposes, i.e., Doctors, Nurses, Technicians and others as one service unit. Physicians as the unique learned professional constituting the real value in medicine will be lost in the crowd of unit bargaining.
3. Two months ago all Arizona physicians received an abusive letter from Mr. John Foster, President of Arizona Blue Cross-Blue Shield, which in effect said, be a participating physician on my terms or starve. Physician screams of "hang the naive" were quelled by ArMA attorneys saying keep hands off.
4. The "usual, customery and reasonable" profiling system which allows individual physician's fees to be adjusted — always downward — is based on a very hazy and difficult to reproduce group charge averages — thus guaranteeing non-uniform payment for the same service.
5. No minimum standard for medical insurance allows health care insurers in this State to sell policies which either totally or grossly inadequately cover physician's fees. Patients are too uninformed to purchase health insurance wisely and have no medical economic professional consultation to which to turn.
6. A large HMO in Arizona remained delinquent for months without the public or physicians being appraised. There was no collective, effective marketplace mechanism to monitor this theft. Although the parent HMO was indicted in federal court, the State of Arizona continued to make premium payments to its subsidiary which a year later repreated the bankruptcy-theft. The only sufferers were physicians and their patients — physicians unknowingly giving

away services and patients paying premiums for which there never would be benefits.

7. The Industrial Commission of Arizona will soon publish its new rate schedule. Physician fee increases will be nonuniform to the tune of nearly 400%! This is an excellent example of divide and conquer; a technique which continues to work well with physicians in the absence of collective economic representation.

Arizona physicians need a new effective economic tool — a physicians' labor organizaion.

A union is a professional labor organization hat maintains an adversary position for a group of people doing work. It is concerned with wages, hours and working conditions. These elements are usually embodied in a contract which is negotiated through collective bargainng.

Collective Bargaining by labor unions is an ndustry regulated by federal labor laws and the Department of Labor. In spite of this regulation whose primary purpose is to protect the rights and income of individual workers) unionism is a success. To my knowledge no labor union action has ever failed to improve wages, hours or working conditions. This is quite a record!

What makes a union a success? Numbers and need! American Interstate Commerce travels 30% by trucks driven by men. When these men don't drive - interstate commerce stops. Keeping hese drivers motivated to work is vital to nterstate commerce.

The diagnosis of disease, accurate and selecive administration of diagnostic procedures, prescription writing, and many therapeutic modalities including surgery are and need to be done by physicians. Without them nonselectivity, inaccuracy, waste and death ensure. When physicians don't work - medical science, as we know it, doesn't exist. The marketplace need for physicians is clear. Cost accounting in mortality and dollars by disease against any patient classification would make this need crystal clear. Currently there is no such medical product yardstick.

Today there is a physicians' union in Arizona meeting a severe medical economic need. Let's ook at what it is doing about some of the problems previously mentioned.

### CONTRACT PHYSICIANS

The professional staff at Pima County Hospital in Tucson are locked in battle with the Board of Supervisors over wages, hours and especially working conditions. To receive our help in this vital area, they need meet as a group and by a majority vote ask our union to represent them. Our parent union, the Union of American Physicians, with skilled, experienced full-time labor negotiators, has effectively negotiated several large contracts including one for the San Mateo County Physicians. Pima County Physicians are currently considering our services.

### BLUE CROSS PHYSICIAN ABUSE

The Guild currently is negotiating for a contract attempting to resolve the unfair and very unprompt method of payment to physicians by this carrier. Blue Shield has been cooperative and so far has bargained in good faith. However, if there is failure to reach an acceptable contract, we will vigorously pursue our points with their customers - our patients!

One can only guess how much more progress could be made by a labor organization which represents 2,000 instead of our 400 physicians!

The concept of usual, customary and reasonable has been a dismal failure. Instead of respecting the individual physician's right to charge whatever seems fair, it has collected the history of all charges in a tardy manner and based payment on an inadequate percentage of the same, while purveying to the consumer-patient the impression that their insurance product would take care of the cost of one's health care needs. This concept must be replaced with same wages for same work for all physicians with appropriate reward for efficiency.

### CORRUPT CARRIERS

Eighteen months ago our little union's insurance Grievance Committee had collected nearly $100,000 from insurance carriers trying to breach their contracts with our patients. We have identified some pretty sorry carriers — information about which will assist our members before their patients erroneously spend health dollars they don't have. At that time we noted a pattern on nonpayment by a railroad HMO. Further investigation by us uncovered nonpayments of over $1,000,000 of health care promised Arizona citizens. The State and Federal authorities filed complaints but were unable to stop the fraudulent 4-state monthly collection of $250,000 in premiums. Only through cooperation and exposure by our press was any public warning possible. The State of Arizona continued payment into a subsidiary of this defunct company for an additional year until they also declared bankruptcy. State officials and legislators associated with and aware of this problem are still in office! One wonders if this fraud would be allowed to exist uncorrected by a state physician labor organization of 2,000 members instead of the present 200.

Might certainly doesn't make right, but make no mistake — in numbers there is strength. Without members you're just an idea whose time has not come. If our ability as physicians to communicate with the marketplace is to remain, we must have an effective economic organization now. It must begin tonight! How?

1. This committee would recommend to the ArMA Board of Directors an item to be placed on the voting agenda at the next general business meeting of the state society directing that it, the Medical Economics Committee:
   a. Be deleted from ArMA.
   b. Serve as the initial Board of Directors of a new physicians' labor movement and become registered with the Department of Labor.
   c. Be replaced by a general membership election of the new organization in 6 months.
2. That ArMA should support in principle the concept of this new labor organization as the primary economic voice of Arizona physicians.
3. That ArMA support in fact the new organization as the collective economic voice of Arizona physicians by immediately referring ArMA's relationship to the Industrial Commission to the new organization.
4. That ArMA actively encourage its members to join the new labor organization — recognizing wide participation as essential to economic effectiveness.
5. The professional Guild of Arizona will disband and join the new labor organization, probably as its Pima County Chapter.
6. That ArMA and the new separate labor organization (both with a unified membership) establish a coordinating committee to share concerns and direct effective coordinated efforts relating to economics, education, licensure, competence, medical care evaluation and medical research for the benefit of all Arizonans.

Let us begin."

It was reported that there are approximately 200 physician members of the Guild residing primarily in the Tucson area. Current dues are $100 each payable $25 per quarter. Although there are no professional employees (labor relations) currently employed by the Guild, there are 1½ employees dealing primarily with insurance. CONSIDERABLE DISCUSSION ENSUED.

IT WAS MOVED AND CARRIED THAT THE CHAIRMAN DEVELOP A RESOLUTION EMBODYING THE CONCEPT PRESENTED BY DR. DAVIS TO BE PRESENTED TO THE NEXT MEETING OF THE MEDICAL ECONOMICS COMMITTEE MEETING.

### 1978 NEGOTIATION DEVELOPMENT OF DATA

Dr. Switzer announced results of the 1977 negotiations with the Industrial Commission of Arizona. The Commission allowed much less than what was requested by the Committee as indicated in the following:

There was considerable discussion concerning the negotiations for the 1977 fee schedule, and the need for early development of data for the 1978 negotiations. It was generally agreed that the Committee should seek more formal input from specialty organizations and physicians who specialize in Occupational Medicine as to what a reasonable fee schedule should be. Further that the Association should collect cost benefit data as well as physician and disease profiling in order to substantiate further requests.

IT WAS MOVED AND CARRIED TO SEND THE FOLLOWING LETTER TO THE CHAIRMAN OF THE INDUSTRIAL COMMISSION OF ARIZONA:

| **Category** | **Present Conversion Factor 5/1/76** | **Proposed Conversion Factor 1/1/77** | **Allowed Conversion Factor 9/1/77** | **Relative Value Study** |
|---|---|---|---|---|
| Medicine | 11.0 | 12.25 | 11.50 | 1964 CRVS |
| Surgery | 9.5 | 10.50 | 9.75 | 1964 CRVS |
| Laboratory | 7.0 | 7.75 | 7.25 | 1964 CRVS |
| Anesthesiology | 11.5 | 13.40 | 12.50 | 1974 Guide (1973 allowed) plus modifying units |
| Radiology | | | | |
| Total Service | 8.0 | 8.75 | 8.25 | 1973 ACR |
| Professional Component Only | 1.85 | 2.10 | 2.00 | 1973 ACR |

"I have had an opportunity to review the new Industrial Fee Schedule. The raise for medicine is approximately 4.5 per cent and for surgery approximately 2.6 per cent. This is well beneath the proposed inflationary rise for this year and appears especially inadequate since two/thirds of the year has already been discounted due to the fact that the new rate does not start for another six weeks. It is especially onerous in surgery partially because of the small amount of raise and, secondly, because surgery habitually cares for the most severely injured industrial workman. This change in the fee schedule also overlooks the fact that the usual, customary and reasonable fee charged by most of the practitioners of the State is higher now than the new Industrial Commission rate projected for September 1st.

The actuarial picture appeared clear. The increase requested would raise the industrial rate by a very tiny percentage. The physicians of Arizona through the actions of the Medical Economics Committee of the Arizona Medical Association have tried to work with the Commission for equitable solutions to the economics of industrial health care delivery. This spirit of cooperation has been eroded by the present Commission action. We cannot be expected to continue expending time and money in an effort at cooperation that is ignored.

The result of the action of the Commission is predictable. Fewer physicians, especially the active high quality practitioner that I am sure the Commission desires, will accept Industrial cases. The Industrial patient is the pawn in this exchange and will be the inevitable loser if an equitable solution is not obtained. The question of quality available care for the Industrial patient is in your hands."

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## ARIZONA MEDICAL ASSOCIATION FOUNDATION, INC. BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association Foundation, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona on Saturday, July 23, 1977, a quorum being present, convened at 11:27 a.m., John F. Kahle, M.D., President and Chairman, presiding.

### ARIZONA HEALTH SERVICE CORPS

Dr. Kahle submitted to the Board of Directors "A Proposal to the National Health Service Corps., Bureau of Community Health Services for Continuation of the Arizona Health Service Corps." (*This 181-page document is available for review at the Foundation's offices and is part of the permanent file*). Comments of background, history, philosophy, and legality were presented by Drs. Kahle, Nichols, Studt, DuVal, Kossuth and Messrs. Jacobson, Morrissey, and Robinson.

While the proposal is lengthy and exceedingly detailed, the following series of recommendations capsulize the proposal:

### "RECOMMENDATIONS OF THE ARIZONA HEALTH SERVICE CORPS TO THE ARIZONA MEDICAL ASSOCIATION FOUNDATION BOARD OF DIRECTORS

Whereas a significant number of medically underserved areas, health manpower shortage areas and other similar indications of health care need have been identified in the state of Arizona by such agencies as the Department of Health Services, the State Legislature, the Health Systems Agencies, the State Board of Medical Examiners, the National Health Service Corps and the Indian Health Service:

The Arizona Health Service Corps. recommends that the ArMA Foundation promote and sponsor a program which will be capable of designing and implementing activities which will accomplish the following objectives:

1. Establish procedures for validating the criteria used to determine the existence and nature of health care needs;
2. Assist populations at the local level to identify and organize their own resources in such a way as to be able to support the health services rendered to them;
3. Assist local groups to develop professional and social environments as well as the appropriate facilities needed to attract and retain physicians and other health care providers;
4. Establish and recruit participants into a Health Service Corps. of health professionals dedicated to bringing health services to populations which are, or, in their absence would be, medically undeserved;
5. Provide a wide range of support services to the Corps.' members so as to enhance their professional competence and effectiveness, and encourage their long term commitment to service in the Corps;
6. Collaborate with all public and private health related agencies, professional associations and volunteer groups, so as to coordinate their several efforts into a cooperative, efficient and effective effort to address the health care problems of the State of Arizona;
7. Promote consumer confidence and professional provider satisfaction by fostering the concepts of freedom of consumer choice in the selection of a physician; freedom of provider choice in location of one's practice; and human dignity, independence and self-reliance through the preservation of the fee for service mechanism for primary medical care;
8. Become, as an organization, economically self-sufficient, by generating at the local level, as a function of services provided, the economic resources essential for operations; and by reducing costs to the absolute minimum through the application of sound managerial practices.

Furthermore, in view of the fact that the health care needs of the state of Arizona cannot be met simply by recruiting established professionals to serve the needs of the moment, but rather require the development and continuing availability of a reliable supply of health manpower:

> The Arizona Health Service Corps further recommends that the ArMA Foundation promote and foster a consortium of effort between the ArMA Foundation and the University of Arizona Health Sciences Center, for the purpose of supporting the development of a capacity for the sustained delivery of quality health care to the actual, or, failing such an effort, the potentially undeserved areas of Arizona.

Furthermore, in view of the extensive organizational and planning activities already accomplished by the Arizona Health Service Corps:

> The Arizona Health Service Corps recommends that the ArMA Foundation continue its support of the Arizona Health Service Corps program;
>
> The Corps further recommends that the ArMA Foundation support the request for continuation of funding which will be made on the basis of the proposal which the Corps has prepared to submit to the Department of Health Education and Welfare and to other appropriate funding sources, for funds to implement the plans proposed therein; and that it become once again the contracting agent."

Following almost two hours of discussion and questions, the following action was taken:

IT WAS MOVED AND CARRIED TO APPROVE THE CONCEPT OF THE PROPOSAL TO THE NATIONAL HEALTH SERVICE CORPS FOR CONTINUATION OF THE ARIZONA HEALTH SERVICE CORPS AND TO ALLOW THE PROPOSAL TO BE SUBMITTED TO THE NATIONAL HEALTH SERVICE CORPS, BUREAU OF COMMUNITY HEALTH SERVICES, DEPARTMENT OF HEALTH, EDUCATION AND WELFARE FOR PURPOSES OF CONTRACT NEGOTIATIONS AND DISCUSSION SUBJECT TO THE FOLLOWING:

1. THAT LEGAL COUNSEL BE INVOLVED IN THE DEVELOPMENT OF ANY CONTRACT EMINATING FROM THE PROPOSAL; AND
2. THAT A MECHANISM BE NEGOTIATED WHEREBY OPERATING FUNDS ARE NOT ADVANCED BY THE ARIZONA MEDICAL ASSOCIATION, INC., OR THE FOUNDATION; AND
3. THAT APPROPRIATE WRITTEN APPROVAL OF THE CONTRACT IS RECEIVED FROM THE UNIVERSITY OF ARIZONA; AND
4. THAT THE CONTRACT PROVIDE THAT ULTIMATE FISCAL CONTROL RESTS WITH THE EXECUTIVE DIRECTOR OF THE ARIZONA MEDICAL ASSOCIATION FOUNDATION, OR ITS SUCCESSOR TO THE ADMINISTRATION OF SUCH CONTRACT; AND
5. THAT THE CONTRACT NOT BE SIGNED UNTIL REVIEWED BY LEGAL COUNSEL AND APPROVED BY THE BOARD OF DIRECTORS.

### BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, on Saturday, July 23, 1977, a quorum being present, convened at 10:13 a.m., John F. Kahle, M.D., President and Chairman, presiding.

### ArMPAC

James A. Austin, M.D., Chairman of the Board of Directors of ArMPAC, submitted the following amended report:

The members of the Board of Directors of the Arizona Medical Association need no enlightenment from the chairman of ArMPAC concerning the impact that the local and national legislatures are having on the practice of medicine. But in this non-campaign year, I am concerned that many of the physicians who practice in this state will not realize that this is the year to develop our funds for the elections which will take place in the Fall of '78.

As so often is the case, it falls to you, the members of the Board, to take a leadership position in developing the membership. We can not be satisfied with less than one hundred percent participation by Arizona doctors AND THEIR FAMILIES.

Unfortunately, our role is not adequately understood by many of our members. ArMPAC is thought of as a policy making committee. It is incumbent on all of us to publicize the fact that ArMPAC exists to accumulate the funds that enable the profession to participate in the various election campaigns. We need the testimony of the members of this Board attesting to the fact that our efforts have been successful in assuring access to the legislators for our representatives.

ArMPAC has never intended that their contributions should "BUY VOTES", in fact, our usual contribution is on the order of $200 to $500, and these amounts are insignificant in overall campaign expenses. However, the ArMPAC organization has been able to time our contributions in such a way as to make these small donations maximally effective. The politicians have regularly expressed their appreciation of our support and in fact are now saying "When you needed support, I listened . . . now I need support, where is ArMPAC?"

We cannot respond beyond the limit of the funds that ArMPAC collects. This is the time for us to be collecting. Regardless of our individual views, ArMPAC is recognized by the community as ORGANIZED MEDICINE PERSONIFIED. Let's get ORGANIZED and let's get collecting ..... Received

### AUXILIARY

**Mrs. George L. Hoffmann's letter of May 8, 1977**

The subject letter thanking the Association for its assistance at the Annual Convention was received.

**Mrs. Joseph H. Reno's letter of August 22, 1977**

The Auxiliary President's letter explaining that they will be making $15,000 available to the College of Medicine for revolving loans to medical students was reviewed with sincere pleasure and approval for this new activity. .............................. Received

### BOARD OF DIRECTORS

**Status Report on House of Delegates Resolutions Adopted April 30, 1977**

The President reviewed the subject matter as follows:

Resolution A-1-77 — Amendment to By-Laws concerning Grievance Committee — incorporated in By-Laws — no further action necessary.

Resolution A-3-77 — Geographic Distribution and Election of District Directors — referred to Articles & By-Laws Committee by Dr. Kahle — no further action necessary.

Resolution A-5-77 — Introduction of Resolutions — Incorporated in By-Laws — no further action necessary.

Resolution I-77 — 1978 Budget — no further action necessary.

Resolution 2-77 — Malpractice Insurance and Hospital Privileges — Resolution communicated to ArHA — no further action necessary.

Resolution 4-77 — Optometrists and the Use of Drugs — no further action necessary at present.

Resolution 5-77 — Specialty Listing — BOMEX Annual Medical Directory — BOMEX informed — no further action necessary.

Resolution 6-77 — Continuation of **Arizona Medicine** — no further action necessary.

Resolution 7-77 — Indigent Health Care, Medicaid — no further action necessary at present.

Resolution 10-77 — Inclusion of Housestaff Physicians under National Labor Relations Act — no further action necessary.

Resolution 11-77 — AMA National Health Insurance proposal (HR1818, S218) — Delegates informed — no further action necessary at present.

Resolution 12-77 — Health Care for the Indigent — Staff is in the process of researching and developing the information in this resolution.

Resolution 15-77 — Physician Extenders — no further action necessary at present.

Resolution 16-77 — 9 percent limit on hospital revenue — delivered to ArMA — no further action necessary at present.

**BOMEX Appointment**

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE GOVERNOR THAT PHILLIP Z. SABA, M.D. BE REAPPOINTED FOR A TERM ENDING JUNE 30, 1982.

**Eastin vs. Broomfield, et al.**

Counsel reported that this case which deals with the constitutionality of the medical malpractice panels called for in H.B. 2001 is still being reviewed by the Arizona Supreme Court ................. Received

**Federal Election Commission Investigation of AMPAC and ArMPAC**

Letters from the FEC acknowledging receipt of submitted materials were received for information. Mr. Jacobson reviewed the general background and current status of the investigation for the information of the Board ......................... Received

**Reed & Crouch vs. Good Samaritan Hospital**

Dr. Reed reported that a suit had been brought by he and Dr. Crouch over the issue of denial of staff privileges for the reason that they did not choose to comply with the hospital's requirement that all staff members carry malpractice insurance. He pointed out that they had fulfilled all administrative routes for relief before filing the suit and that the suit did not ask for damages, only legal costs.

Dr. Reed reported that Samaritan Health Services has lifted all restrictions on their privileges but that their insurance carriers were raising problems that continue to delay full reinstatement. .............. Received

THE BOARD OF DIRECTORS ADJOURNED AT THIS POINT IN ORDER TO CONVENE AS THE BOARD OF DIRECTORS OF THE ARIZONA MEDICAL ASSOCIATION FOUNDATION, INC.

### EXECUTIVE COMMITTEE

**Membership Classification Changes Approved**

Maricopa County Medical Cosiety:

a. Oscar J. Blende, M.D. — Active to Associate — Account retired — Dues exempt — effective 1/1/77.
b. John L. Ford, M.D. — Active to Associate — Account retired — Dues exempt — effective 1/1/77.
c. Robert Kierland, M.D. — Active to Associate — Account retired — Dues exempt — effective 1/1/77.
d. Lester E. Kron, M.D. — Active to Associate — Account disabled — Dues exempt — effective 1/1/77.
e. Shaw McDaniel, M.D. — Active to Associate — Account disabled — Dues exempt — effective 7/1/77.

Pima County Medical Society:

a. Gregory J. Macuilla, M.D. — Active to Affiliate — Moved from state — Dues exempt — effective 7/1/77.

**Dues Exemptions or Refunds Approved**

a. Richard A. Matthews, M.D. — Six month dues refund — Account Residency — Effective 7/1/77.
b. Howard J. Reuben, M.D. — Full year exemption — Account Financial Hardship — Effective 1/1/77.

### FINANCE COMMITTEE

**Financial Report for Period Ending June 30, 1977**

The subject report was received for information as presented.

**Installment Payment of ArMA Dues**

At the request of the Maricopa County Medical Society to provide an installment payment schedule for ArMA dues to those members requesting it, the following action was taken.

IT WAS MOVED AND CARRIED TO MAKE THE FOLLOWING INSTALLMENT PAYMENT SCHEDULE FOR ArMA DUES AVAILABLE TO THOSE MEMBERS REQUESTING IT.

1978 Dues —

| Amount | Due Date | Delinquency Date |
|---|---|---|
| $ 83.33 | January 1 | February 15 |
| 83.33 | April 1 | June 15 |
| 83.34 | July 1 | September 15 |

$250.00 = Total ArMA 1978 Dues

## LEGISLATIVE COMMITTEE

### Appointment Confirmation

IT WAS MOVED AND CARRIED TO CONFIRM THE APPOINTMENT OF DAVID B. GILBERT, M.D. TO THE LEGISLATIVE COMMITTEE.

## MEDICAL ECONOMICS COMMITTEE

### Fee Surveys by Specialty Societies

Mr. Jacobson reviewed a recent situation wherein a medical specialty society was asked to conduct a fee survey for a Foundation for Medical Care.

He pointed out that there is great possibility that such surveys by medical specialty societies could be construed to be in violation of antitrust laws and recommended that medical specialty societies not engage in such surveys. .................. Received

## MEDICAL EDUCATION COMMITTEE

### ArHA Representation on the Committee

IT WAS MOVED AND CARRIED THAT IN ORDER TO COMPLY WITH THE LIAISON COMMITTEE ON CONTINUING MEDICAL EDUCATION, THAT A REPRESENTATIVE OF THE STATE HOSPITAL ASSOCIATION BE ON THE MEDICAL EDUCATION COMMITTEE, THAT THE PRESIDENT APPOINT A MEMBER OF THE ARIZONA HOSPITAL ASSOCIATION TO THE COMMITTEE.

It was understood that we would request from ArHA a list of three or four names as possible candidates for appointment.

### Accreditation Recommendations

Phoenix Psychiatric Council:

IT WAS MOVED AND CARRIED TO APPROVE ACCREDITATION OF THE CONTINUING MEDICAL EDUCATION PROGRAM OF THE PHOENIX PSYCHIATRIC COUNCIL FOR A PERIOD OF TWO YEARS WITH RE-SURVEY AT THE END OF THAT TIME.

St. Luke's Hospital Medical Center:

IT WAS MOVED AND CARRIED THAT THE ST. LUKE'S HOSPITAL MEDICAL CENTER BE GRANTED PROBATIONAL ACCREDITATION FOR A PERIOD OF ONE YEAR WITH RESURVEY AT THAT TIME TO DETERMINE IF ACCREDITATION IS TO BE CONTINUED.

Arizona Medical Association:

IT WAS MOVED AND CARRIED TO APPROVE ACCREDITATION OF THE ARIZONA MEDICAL ASSOCIATION'S CONTINUING MEDICAL EDUCATION PROGRAM FOR A PERIOD OF TWO YEARS WITH RE-SURVEY AT THAT TIME.

### Selection Committee for Associate Dean for Continuing Medical Education and Outreach — U of A

It was reported that Ashton B. Taylor, M.D. had agreed to serve as Chairman of a selection committee for the subject position .......................... Received

## PHYSICIAN REHABILITATION COMMITTEE

### Confirmation of Appointments

IT WAS MOVED AND CARRIED TO CONFIRM THE FOLLOWING NEW APPOINTMENTS TO THE COMMITTEE:

Robert E. Cottor, M.D.
Herbert E. Pollock, M.D.
B. Ross Landess, M.D.
Mark A. Wellek, M.D.

## AD HOC UNDERWRITING COMMITTEE

### Section on Physician Counseling

The committee's recommendation that a mechanism be established to provide counseling to physicians whose applications for insurance reveal problem areas in their practices was discussed at some length.

IT WAS MOVED AND CARRIED TO APPROVE THE CREATION OF A SECTION ON PHYSICIAN COUNSELING OF THE UNDERWRITING COMMITTEE THAT WOULD OFFER THEIR SERVICES TO PHYSICIANS WHO SEEM TO BE HAVING MALPRACTICE PROBLEMS IN THEIR PRACTICES. PARTICIPATION WITH THE SECTION WOULD BE VOLUNTARY ON THE PART OF ANY PARTICULAR PHYSICIAN.

### Other Health Care Providers

The question of suggesting that other health care providers set up similar mechanisms as the Section on Physician Counseling was discussed.

IT WAS MOVED AND CARRIED TO SUGGEST TO THE MUTUAL INSURANCE COMPANY OF ARIZONA (MICA) THAT THEY, MICA, MIGHT WANT TO SUGGEST THAT ORGANIZATIONS REPRESENTING OTHER PROVIDERS ESTABLISH SIMILAR COMMITTEES.

## AD HOC COMMITTEE ON HEALTH CARE COSTS

### Confirmation of Appointments

IT WAS MOVED AND CARRIED TO CONFIRM THE FOLLOWING APPOINTMENTS:

Robert E. Hastings, Jr., M.D., Chairman
W. Scott Chisholm, M.D.
Ronald L. Christ, M.D.
Mr. T. Abner Huff
Arthur D. Nelson, M.D.
Laurence M. Linkner, M.D.
John E. Oakley, M.D.
Wallace A. Reed, M.D.
Donald F. Schaller, M.D.
Richard W. Switzer, M.D.

## AMA DELEGATION

### Richard O. Flynn, M.D. Resignation

Dr. Flynn's resignation as Delegate to the AMA was received with regret.

### Edward Sattenspiel, M.D. Election

IT WAS MOVED AND CARRIED TO CONFIRM THE ELECTION OF EDWARD SATTENSPIEL, M.D. TO FULFILL THE UNEXPIRED TERM CAUSED BY DR. FLYNN'S RESIGNATION (5/1/77 - 12/31/77).

### Reports of June 18-25, 1977 AMA Meeting

Reports of the subject meeting were submitted by Drs. Chisholm, Curtis, Dudley, Kahle, Moraca, and Sattenspiel ....... ............................. Received

*(Copies of these reports are available at the Association's office.)*

### Housestaff

A letter from Wayne Beck, M.D., Donald Elgin, M.D., and Victor Zannis, M.D., who represented the Arizona Housestaff Section at the AMA meeting, was received expressing appreciation for the Association's assistance in their attendance at the meeting. ............................. Received

### Students

A similar letter was received from medical students Robert L. Beren, Robin Dawn Clark, and Gerald R. McNamara.

## CORRESPONDENCE

### Non-member Physicians on Committees

Letters were received from James E. Brady, Jr., M.D. (6/20/77) and Richard Dale, M.D. (7/18/77), President of the Pima County Medical Society questioning the practice of having M.D.'s on committees who are not members of the Association.

It was pointed out that of the 394 physicians who serve on our committees, there are 12 physicians who are not members. Most of these 12 have been asked to serve because of the positions they hold with certain agencies, i.e., Department of Health Services, etc., or because they have special expertise in the area of interest to the committee's work.

IT WAS MOVED AND CARRIED TO REFER THIS MATTER TO THE ARTICLES OF INCORPORATION AND BY-LAWS COMMITTEE ASKING THEM TO PREPARE A RECOMMENDATION REGARDING THE MATTER OF NON-MEMBER M.D's BEING APPOINTED TO COMMITTEES.

### FTC Jurisdiction

The AMA Mailgram of May 12, 1977 was received which announced that the AMA was successful in getting the deletion from H.R. 3816 that portion which would have put non-profit organizations under the jurisdiction of the Federal Trade Commission ...................... Received with Joy

### Theodore Roosevelt Council, Boy Scouts of America

The letter of May 12, 1977 from the subject organization thanking us for their participation in our President's banquet on April 29, 1977 was received.

### 50 Year Club

Darrell E. Hayhurst, M.D.'s letter of May 9, 1977 expressing appreciation for this 50 Year Club placque was received.

## OTHER BUSINESS

### Bates vs. State Bar of Arizona and U.S. Supreme Court Decision re: Advertising

Mr. Jacobson reviewed the recent U.S. Supreme Court decision regarding advertising by lawyers, and stated that it was his and others opinion that the decision will definitely apply to the medical profession as well as the legal profession.

He pointed out that there appears to exist a need for development of some regulatory guidelines to cover possible gaps in Arizona statutes created by the U.S. Supreme Court decision.

IT WAS MOVED AND CARRIED TO ASK THE PRESIDENT TO APPOINT A COMMITTEE TO REVIEW THIS MATTER AND MAKE RECOMMENDATIONS AS TO HOW BEST TO HANDLE THIS MATTER.

### Maricopa County Medical Society Vote on Proposed By-Laws Change

It was announced that the recent proposal to change the By-Laws of the Maricopa County Medical Society so that membership in ArMA would be voluntary was defeated.

### Family Life Education Curriculum

IT WAS MOVED AND CARRIED THAT THE ARIZONA MEDICAL ASSO-

CIATION ACTIVELY SUPPORT THE DEPARTMENT OF EDUCATION IN THE DEVELOPMENT OF FAMILY LIFE EDUCATION CURRICULUM, KINDERGARTEN THROUGH GRADE 12. FURTHER, THAT THE ARIZONA MEDICAL ASSOCIATION ENCOURAGE EACH PHYSICIAN IN THE STATE TO BE INVOLVED WITH THEIR LOCAL SCHOOL BOARD IN SUPPORT OF THIS ENDEAVOR.

**Medicare — Payment of Non-Physicians**

Dr. DuVal reported that H.R. 3 dealing with Medicare Amendments is before the Congress and provides for direct payment of Physician's Assistants and Nurse Practitioners. He urged that the profession actively oppose this new activity.

# *Future Medical Meetings*

## CONTINUING MEDICAL EDUCATION

THE FOLLOWING INSTITUTIONS AND ORGANIZATIONS HAVE RECEIVED ACCREDITATION FOR CONTINUING MEDICAL EDUCATION FROM THE COUNCIL ON MEDICAL EDUCATION OF THE AMA

ARIZONA STATE HOSPITAL PHOENIX
DESERT SAMARITAN HOSPITAL MESA
GOOD SAMARITAN HOSPITAL PHOENIX
HEALTH MAINTENANCE ASSOCIATES
PHOENIX INDIAN MEDICAL CENTER
MARICOPA COUNTY GENERAL HOSPITAL PHOENIX
MEMORIAL HOSPITAL PHOENIX
ST LUKE S HOSPITAL AND MEDICAL CENTER PHOENIX
ST JOSEPH S HOSPITAL AND MEDICAL CENTER
  PHOENIX
TUCSON HOSPITALS MEDICAL EDUCATION PROGRAM
  TUCSON
U OF A HEALTH SCIENCES CENTER
VETERANS ADMINISTRATION CENTER PRESCOTT
VETERANS ADMINISTRATION HOSPITAL PHOENIX

The accredited institutions and organizations above produce a variety of continuing medical education programs Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category I credit Physicians who participate in programs which are designated Category I by accredited nstitutions will receive Category I credit toward the ArMA Certificate in CME and the AMA's Physicians Recognition Award

## OCTOBER

### 25th ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

October 12-15, 1977, Del Webb's Towne House, Phoenix, AZ. Sponsor Medical Society of the United States and Mexico Contact Lucy A. Vernetti, M D., 333 W Thomas Rd Ste 207, Phoenix, AZ 85013 Approved for required hours toward the ArMA Certificate in Continung Medical Education

### COMBINED GRAND ROUNDS

October 5, 1977, Good Samaritan Hospital. Sponsor: Family Practice Residency Programs of St. Joseph's, Good Samaritan, and Scottsdale Memorial Hospitals. Contact: Ann Larsen, R.N., Program Coordinator, Family Practice Residency Program, St. Joseph's Hospital and Medical Center, Phoenix, AZ 85013. Approved for required hours toward the AMA Certificate in Continuing Medical Education.

### CLINICAL CONFERENCE ON "PNEUMONIAS"

October 8, 1977, Ramada Inn, Casa Grande, AZ. Sponsor: Arizona Thoracic Society. Contact: Robert W. Shook, 1239 E. McDowell Rd., Phoenix, AZ 85006. Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

### BASIC SCIENCE REVIEW SEMINARS— "Fluid and Electrolytes"

October 12 & 26 and November 9, 1977. AHSC—Rm. 5403, Tucson, AZ. Sponsor U. of A. College of Medicine. Contact. George D Comerci, M D., 1501 N Campbell, Tucson, AZ 85724 Approved for 2-1/2 required hours per session toward the ArMA Certificate in Continuing Medical Education

### BI-ANNUAL SYMPOSIUM ON INFECTIONS CONTROL

October 13 & 14, 1977. Sunburst Hotel, Scottsdale, AZ. Sponsor: Assoc. for Infection Control. Contact: Alice Thebert, R.N., Registrar, 1267 B East Maryland St. Phoenix, AZ 85014. Approved for 11 required hours toward the ArMA Certificate in Continuing Medical Education.

### FOURTH ANNUAL MEETING OF THE SOCIETY FOR THE ADVANCEMENT OF FREESTANDING AMBULATORY SURGICAL CARE.

October 28 - 30, 1977. Continental Plaza Hotel, Chicago, Illinois. Sponsor: Society for the Advancement of Freestanding Ambulatory Surgical Care. Contact: Brian Dawson, M.D., 1040 E. McDowell Rd., Phoenix, AZ 85006. Approved for 10 required hours toward the ArMA Certificate in Continuing Medical Education.

### STRESS, PSYCHOLOGICAL FACTORS, AND CANCER.

October 22, 1977. Ramada Inn East/Airport, Phoenix, AZ 85008. Sponsor: Arizona Society for Clinical Social Work & Psychotherapy, Inc. Contact: Eve R. Mayer, A.C.S.W., 7300 4th St., Ste. 217, Scottsdale, AZ 85251. Approved for 5 required hours toward the ArMA Certificate in Continuing Medical Education.

### WORKSHOP ON MEDICAL ETHICS: QUESTIONS ON MORALITY

November 12, 13, 1977, Franciscan Renewal Center. Contact: Miss K. Brown, Franciscan Renewal Center, 5802 E. Lincoln Dr., Scottsdale, AZ 85252.

## NOVEMBER

### PULMONARY DISEASE

November 5 & 6, 1977. Maricopa County General Hospital, Phoenix, AZ 85008. Sponsor: Radiology Department, MCGH. Contact: Alex Newman, M.D., Dept. of Radiology, Maricopa County General Hospital 2601 East Roosevelt, Phoenix, AZ 85008. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### PERINATAL PRESPECTIVE '77

November 7 - 10, 1977, Hyatt Regency Hotel, Phoenix, AZ. Sponsor: Grand Canyon-Saguaro Chapter, March of Dimes. Contact: William J. Daily, M.D. or Mr. James G. Smith, c/o March of Dimes, 316 W. McDowell Rd., Phoenix, AZ. Approved for 40 required hours toward the ArMA Certificate in Continuing Medical Education.

### PEDIATRIC ORIGINS OF CHRONIC LUNG DISEASE

December 14, 1977. Yuma Regional Medical Center, Yuma, AZ. Sponsor: Arizona Health Sciences Center, Contact: R. Cannell, M.D., 2451 Ave. A & Eight, Yuma, AZ. Approved for 1 required hour toward the ArMA Certificate in Continuing Medical Education.

## JANUARY

### PEDIATRIC UPDATE 1978

January 16-19 Doubletree Inn, Scottsdale, AZ Sponsor Dept. of Pediatrics of St Joseph's Hospital and Medical Center, Phoenix, AZ Contact Melvin L Cohen, M.D. Dept. of Pediatric Education, St Joseph's Hospital and Medical Center, 350 W Thomas Road, Phoenix, AZ 85013. Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education an A A F P credits

## FEBRUARY

### AAFP ANNUAL MEETING 1978

February 1-4, 1978. Doubletree Inn, Scottsdale, AZ. Sponsor: Arizona Academy of Family Physicians. Contact: Mrs. June Boykin, 1027½ E. Camelback Rd., Phoenix, AZ 85014. Approved for required hours toward the ArMA Certificate In Continuing Medical Education.

### SOUTHWESTERN SEMINAR ON NEUROMUSCULAR DISORDERS IN CHILDREN

February 17-18, 1978. Health Sciences Center, Main Auditorium, Tucson, AZ. Sponsor: U of A Health Sciences Center Dept. of Neurology. Contact: Lawrence Z. Stern, M.D., Dept. of Neurology, U of A Health Sciences Center, Tucson, AS 85724. Approved for 9 required hours toward the ArMA Certificate in Continuing Medical Education.

### ARIZONA SOCIETY OF ANESTHESIOLOGISTS ANNUAL MEETING

February 25 & 26, 1978. Scottsdale Hilton Hotel, Scottsdale, AZ. Sponsor: Arizona Society of Anesthesiologists. Contact: Casey D. Blitt, M.D., Dept. of Anesthesiology, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 9 required hours toward the ArMA Certificate in Continuing Medical Education.

## MARCH

### VALLEY OF THE SUN DERMATOLOGIC SYMPOSIUM

March 2-5, 1978. Casa Blanca Inn, Scottsdale, AZ. Sponsor: Phoenix Dermatological Society, & University of Arizona. Contact: Dr. Fillmore K. Bagatela, Dr. Peter J. Lynch, 333 E. Virginia, Phoenix, AZ. Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

### DAY OF HEMATOLOGY

March 3, 1978, Camelback Inn, Scottsdale, AZ. Sponsor St. Joseph's Hospital and Medical Center, Phoenix, AZ Contact Ethelann Murray, M D, St Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, AZ 85013 Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education

### THE SECOND NATIONAL CONFERENCE ON OTITIS MEDIA

March 3-5 1978, Doubletree Inn, Scottsdale, AZ Sponsor Univ of Arizona College of Medicine and the Indian Health Service. Contact Office of Continuing Medical Education and Outreach, University of Arizona College of Medicine, Tucson, AZ 85724 Approved for 17 5 required hours toward the ArMA Certificate in Continuing Medical Education.

### CURRENT CONCEPTS IN CEREBROVASCULAR DISEASE.

March 11-19, 1978, Sun Valley Inn, Sun Valley, Idaho. Sponsor: Office of Continuing Medical Education & Dept. of Surgery, U of A. Contact: Jerry Goldstone, M.D. & Wesley S. Moore, M.D., U of A Health Sciences Center, Tucson, AZ 85724. Approved for 22.3 required hours toward the ArMA Certificate in Continuing Medical Education.

## MONTHLY OR WEEKLY

### OFFICE PSYCHIATRY FOR THE PRIMARY PROVIDER

2nd Monday of month 4811 N 7th Street Phoenix, AZ Sponsor Arizona Health Plan Contact T R Bittker, M D, Box 5000 Phoenix, AZ 85010 Approved for required hours toward the ArMA Certificate in Continuing Medical

### CLINICAL IMMUNOLOGY, ALLERGY AND RHEUMATOLOGY ROUNDS

Every Friday Noon-1 p m Sponsor U of A College of Medicine, Dept of Internal Medicine, Clinical Immunology Section. Contact John Boyer, M D, U of A College of Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### ENDOCRINOLOGY SEMINAR

Every Thursday, Noon-1 p m., 1st, 3rd & 5th Thursday—Rm N318, VA Hospital, 2nd & 4th Thursday, Rm 6505. Tucson Medical Center, Sponsor U. of A College of Medicine, Department of Internal Medicine, Department of Internal Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### HEMATOLOGY-ONOCOLOGY CLINICAL CONFERENCE

Every Tuesday, Noon-1 p.m. 1st, 3rd & 5th Tuesdays—Rm 6505. AZ Medical Center 2nd & 4th Tuesdays—Rm. N318, Veterans Adm. Hospital Sponsor U. of A College of Medicine, Dept of Internal Medicine. Contact Sidney Salmon, M.D, U of A College of Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### GRAND WARD ROUNDS—TRAUMA

Every Tuesday, 8 a.m Arizona Medical Center, Tucson, AZ. Sponsor U. of A. College of Medicine, Surgery Dept, Trauma Section. Contact. Martin Silverstein, M.D., U. of A College of Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### PEDIATRIC GRAND ROUNDS

Every Tuesday, 12:30 p.m. - 1:30 p.m. Alternates between Tucson Medical Clinic and U of A Health Sciences Center. Sponsor U of A College of Medicine, Dept. of Pediatrics. Contact: Hugh Thompson, M.D., 1501 N. Campbell, Tucson, AZ. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### PROBLEM CASE WORKSHOPS

3rd Monday of each month 7 30 a.m. Room 4410, Arizona Medical Center, Tucson, AZ. Sponsor Division of Ophthalmology, U. of A. College of Medicine. Contact H E. Cross, M.D., Ph.D. Arizona Medical Center, Dept. of Surgery, Tucson, AZ. Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education

### MEDICAL GRAND ROUNDS

Every Wednesday, Noon-1 p.m. 1st, 3rd & 5th Wednesday—Staff Conf Rm, VA Hospital 2nd & 4th Wednesday—Rm. 5403, Arizona Medical Center Sponsor U of A College of Medicine, Dept of Internal Medicine Contact. Jay Smith, M D, U of A College of Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### NEUROSCIENCES SEMINAR

Every Friday, 7:30 a.m. U of A Health Sciences Center, Rm. 7505, Tucson, AZ. Sponsor: Dept. of Neurology. Contact: Colin R. Bamford, M.D. & Jose F. Laguna, M.D., Dept. of Neurology, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### NEUROLOGY GRAND ROUNDS

Every Friday, 12 noon. 1st, 3rd & 5th Fridays, U of A Health Sciences Center, Rm. 7505. 2nd and 4th Fridays, Veterans Administration Hospital. Sponsor: U of A Health Sciences Center, Dept. of Neurology. Contact: William A. Sibley, M.D., Dept. of Neurology U of A Health Sciences Center, Tucson, AZ 85724. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### PSYCHIATRIC GRAND ROUNDS

Every Wed., Sept. to May, 4-5.30 p.m. Rm. 8403, Arizona Medical Center, Tucson, AZ. Sponsor U. of A College of Medicine Dept. of Psychiatry Contact Alan Levenson, M.D., U. of A College of Medicine, Tucson, AZ 85721 Approved for 1-1/2 required hour per session toward the ArMA Certificate in Continuing Medical Education

### TRAUMA CONFERENCE

Every Thursday, 4-5:00 p.m. Health Sciences Center, Rm. 5505, Tucson, AZ. Sponsor: U of A College of Medicine, Dept. of Surgery. Contact: Martin Silverstein, M.D., Dept. of Surgery, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### STAFF EDUCATION CONFERENCE

Wednesdays, Weekly, 1 p m. Arizona State Hospital, Phoenix, AZ. Sponsor Arizona State Hospital. Contact Howard E. Wulsin, M D, Arizona State Hospital, 2500 E. Van Buren, Phoenix, AZ 85008 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### SURGICAL GRAND ROUNDS
### 4TH TUESDAY OF EACH MONTH

Hospital Auditorium, Baptist Hospital, Phoenix Sponsor Baptist Hospital Phoenix Contact James B Shields, M D., 6036 N 19th Ave. Phoenix, AZ 85015. Approved for 1-1/2 required hours per month toward the ArMA Certificate in Continuing Medical Education.

### PATIENT STAFFING CONFERENCE

Three times weekly. Camelback Hospita Phoenix, AZ. Sponsor: Camelback Hospital Contact. Medical Director, Camelback Hospital, 5055 N 34th St., Phoenix, AZ 85018. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education

### MONTHLY MEDICAL EDUCATION SEMINAR

Third Monday of the Month, 6:30 p m., Kiva Conference Room, Phoenix Memorial Hospital

George G. Saravia, MD

James E. Campbell, MD

Mark A. Wellek, MD

Floyd L Templeton, MD

THESE SHINGLES MAKE A GREAT BUILDING

Thomas F. Kruchek, MD

Paul M. Bindelglas, MD

Jerome F. Szymanski, MD

Stuart M Gould, Jr., MD

Otto L. Bendheim, MD

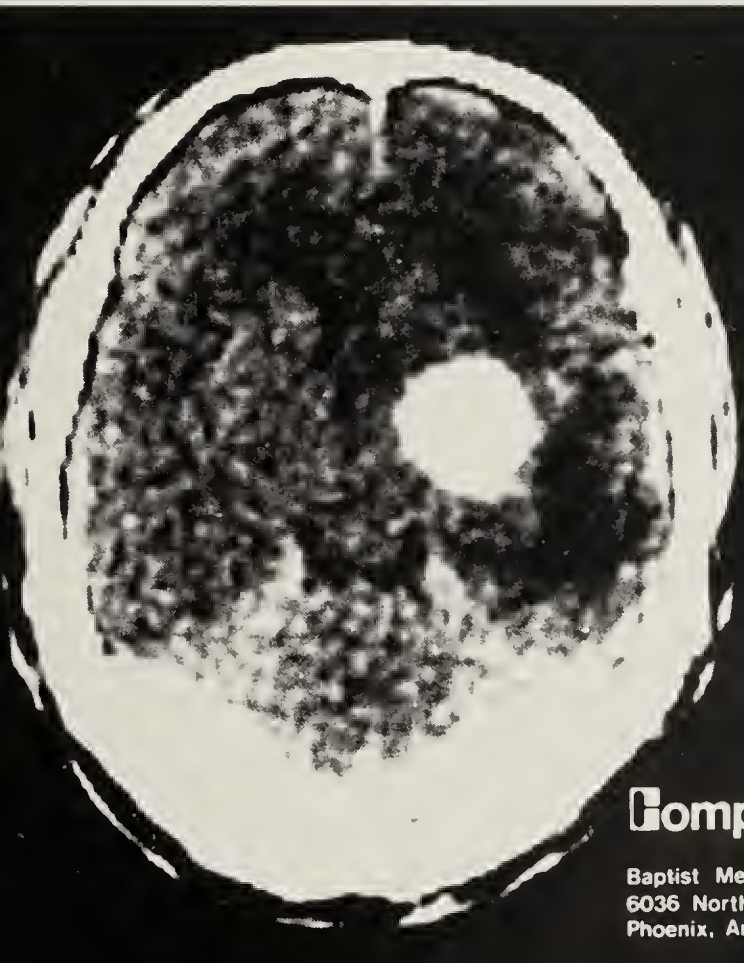
Harris D. Murley, MD

Eugene R. Almer, MD

Harold E. McNeely, Ph.D.

Camelback Professional Building
5051 N. 34th STREET
PHOENIX, ARIZONA 85018
(602) 955-6200

general psychiatry / child psychiatry / psychoanalysis, clinical psychology / and family counseling.



Computed Tomography of the Head

CNS

Computed Neurological Scanning Center

Baptist Medical Center Outpatient Facility
6036 North 19th Avenue, Suite 207
Phoenix, Arizona 85015 (602) 242-5859

Alan Yudell M D    Ralph B Lilly M D    Barry A Hendin, M D

Sponsor Medical Staff of Memorial Hospital Contact George Scharf, M D., 1201 South 7th Avenue, Phoenix, AZ 85007 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

COUNTER TRANSFERENCE GROUP

Weekly, Thurs 8-10 p.m Sponsor. Phoenix Psychiatric Council. Contact James E Campbell, M D. 5051 N 34th St., Phoenix, AZ 85018 Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education

DESERT SAMARITAN HOSPITAL

Wednesday Evenings 7 p m. Sponsor Desert Samaritan Hospital Contact L A Rosati, M D, Laboratory, Desert Samaritan Hospital, Mesa, AZ 85202 Approved for required hours toward the ArMA Certificate in Continuing Medical Education

PULMONARY DISEASE GRAND ROUNDS

Mondays — 12 Noon. D-5 North Conference Rm, Good Samaritan Hospital, Phoenix, AZ Sponsor Pulmonary Disease Teaching Service, Good Samaritan Hospital Contact Bernard E. Levine, M D Pulmonary Function Laboratory, Good Samaritan Hospital, 1033 E. McDowell Hospital, Phoenix, AZ 85006. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

CLINICAL CANCER CONFERENCE

3rd Wednesday every month, Butler Bldg Conference Room, Good Samaritan Hospital, Phoenix, AZ. Sponsor Good Samaritan Hospital. Contact John A Bruner, M D. 926 E McDowell Road, Phoenix, AZ 85006. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

TUMOR BOARD CONFERENCE

Every Friday at Noon, Kiva Conference Room, Phoenix Memorial Hospital Sponsor Phoenix Memorial Hospital Contact. Howard Kimball, M D, 333 West Thomas Road. Phoenix, AZ 85013 Approved for credit toward the ArMA Certificate in Continuing Medical Education

MONTHLY MEDICAL EDUCATION SEMINAR

Third Monday of the Month, 6 30 p m. Kiva Conference Room, Phoenix Memorial Hospital Sponsor Medical Staff of Memorial Hospital Contact George Scharf, M D. 1201 South 7th Avenue Phoenix, AZ 85007 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

MONTLHY MEETING OF TUCSON RADIOLOGISTS

Last Tues of Month, Plaza International, Tucson, AZ Sponsor U of A Medical Center, Dept. of Radiology Contact Irwin M Freundlich, M D. Arizona Medical Center, Dept of Radiology, Tucson, AZ 85724 Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor Medical Staff. Contact R. C. Good, M D., Dir of Medical Education, 7300 E 4th St., Scottsdale, AZ Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MORBIDITY & MORALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ, Sponsor Medical Staff Contact R C. Good, M.D. Dir Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education

CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12 45 p m. Scottsdale Memorial Hospital, Scottsdale, AZ Sponsor Medical Staff Contact R C. Good, M.D., Director of Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ Sponsor Medical Staff. Contact R. C. Good, M.D., Dir of Medical Education, 7300 E. 4th St., Scottsdale, AZ Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CARDIOLOGY CONFERENCE

Weekly — Friday 8-9 a.m. St Mary's Hospital Auditorium, Tucson, AZ. Sponsor St Mary's Hospital. Contact A L Forte, M.D., St Mary's Hospital, Tucson, AZ 85724 Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

GRAND ROUNDS

Each Thursday 7 a.m.-8 a.m.. St Mary's Hospital and Health Center, Sponsor Depts. of Medicine, Surgery, Radiology, Pathology and Family Practice. Contact Richard Silver, M D., Chairman, Medical Education and Library Committee, Century Medical Plaza, Suite 160. 1701 West St. Mary's Road. Tucson, AZ 85703 Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education

GI CONFERENCE

(Special Program with U of A Consultants) 4th Friday, 1 p.m., T-5 Sponsor VA Hospital Phoenix Contact Jasper L. McPhail, M.D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

G.I.-RADIOLOGY CLINICAL CORRELATION CONFERENCE

1st and 3rd Monday, 1 p m., C435. Sponsor VA Hospital, Phoenix, AZ Contact. Jasper L. McPhail, M D., Veterans Administration Hospital, 7th & Indian School Rd, Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education

GASTROENTEROLOGY CONFERENCE

1st and 3rd Tuesday, 1 p.m., T-5. Sponsor VA Hospital Phoenix, Contact Jasper L. McPhail, M D VA Hospital, 7th & Indian School Rd Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

CARDIOLOGY CONFERENCE

2nd Thursday, 1 p.m., T-5 Sponsor VA Hospital Phoenix. Contact Jasper L. McPhail, M D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

CLINICOPATHOLOGY CONFERENCE

4th Thursday of 3rd Mo. (Mar., June., Sept & Dec.), 1 p.m., T-5 Sponsor VA Hospita Phoenix Contact Jasper L. McPhail, M.D. VA Hospital, 7th & Indian School Rd., Phoenix, AZ Approved for required hours toward the ArMA Certificate in Continuing Education.

MEDICAL-SURGICAL CHEST CONFERENCE

1st and 3rd Thursday, 1 p.m., T-5. Sponsor VA Hospital Phoenix. Contact. Jasper L. McPhail M.D. VA Hospital, 7th & Indian School Rd Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education

CANCER SYMPOSIUM (fomerly Tumor Board)

Each Wednesday, 1 p.m., T-5 Sponsor VA Hospital Phoenix Contact Jasper L McPhail M.D., VA Hospital, 7th & Indian School Rd Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education

SURGERY-PATHOLOGY CONFERENCE

Each Thursday, 7 a m., 2128. Sponsor VA Hospital Phoenix Contact Jasper L McPhail M.D., VA Hospital, 7th & Indian School Rd Phoenix, AZ Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

DERMATOLOGY CONFERENCE

1st, 2nd & 3rd Wednesday Sponsor VA Hospital Phoenix Contact Jasper L. McPhail, M D VA Hospital, 7th & Indian School Rd, Phoenix AZ Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

MEDICAL SERVICE GRAND ROUNDS

Each Friday, 11 a m., T-5 Sponsor VA Hospita Phoenix Contact Jasper L. McPhail, M D, VA Hospital, 7th & Indian School Rd., Phoenix, AZ Approved for required hours toward the ArMA Certificate in Continuing Medical Education

HEPATOLOGY CONFERENCE

2nd and 4th Tuesday, 1 p.m., 2128. Sponsor VA Hospital Phoenix Contact. Jasper L McPhail, M D, VA Hospital, 7th & Indian Schoo Rd., Phoenix AZ Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

UROLOGY-PATHOLOGY CONFERENCE

Each Wednesday, 7 a.m., 2128 Sponsor VA Hospital Phoenix Contact Jasper L McPhail M D., VA Hospital, 7th and Indian School Rd Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education

**STANFORD UNIVERSITY SCHOOL OF MEDICINE**
**OFFICE OF POSTGRADUATE MEDICAL EDUCATION**

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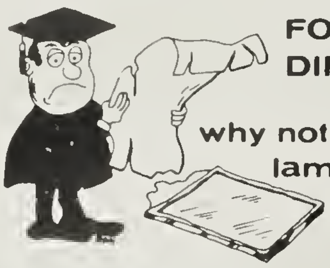

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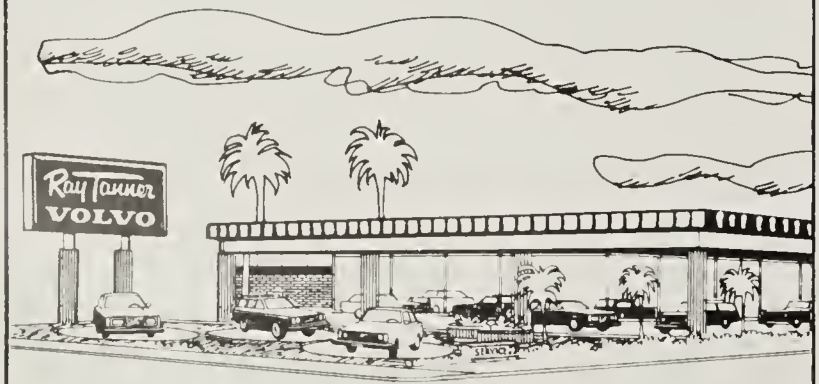

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**Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms:** *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus morganii.* **It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination.** *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

**Also for the treatment of documented *Pneumocystis carinii* pneumonitis. To date, this drug has been tested only in patients 9 months to 16 years of age who were immunosuppressed by cancer therapy.**

The recommended quantitative disc susceptibility method (*Federal Register,* 37:20527-20529, 1972) may be used to estimate bacterial susceptibility to Bactrim. A laboratory report of "Susceptible to trimethoprim-sulfamethoxazole" indicates an infection likely to respond to Bactrim therapy. If infection is confined to the urine, "Intermediate susceptibility" also indicates a likely response. "Resistant" indicates that response is unlikely.

**Contraindications:** Hypersensitivity to trimethoprim or sulfonamides; pregnancy; nursing mothers; infants less than two months of age.

**Warnings:** Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

**Precautions:** Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function.

**Adverse Reactions:** All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L. E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

**Dosage: Not recommended for infants less than two months of age.**

*Urinary Tract Infections:* Usual adult dosage—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days.

Recommended dosage for children—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. A guide follows:

*Children two months of age or older*

| Weight | | Dose—every 12 hours | |
|---|---|---|---|
| lbs | kgs | Teaspoonfuls | Tablets |
| 20 | 9 | 1 teasp. (5 ml) | ½ tablet |
| 40 | 18 | 2 teasp. (10 ml) | 1 tablet |
| 60 | 27 | 3 teasp. (15 ml) | 1½ tablets |
| 80 | 36 | 4 teasp. (20 ml) | 2 tablets or 1 DS tablet |

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| Above 30 | Usual standard regimen |
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*Pneumocystis carinii pneumonitis:* Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

**Supplied:** *Double Strength (DS) tablets,* each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100; Tel-E-Dose® packages of 100. *Tablets,* each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 40, available singly and in trays of 10. *Oral suspension,* containing in each teaspoonful (5 ml) the equivalent of 40 mg trimethoprim and 200 mg sulfamethoxazole, fruit-licorice flavored—bottles of 16 oz (1 pint).

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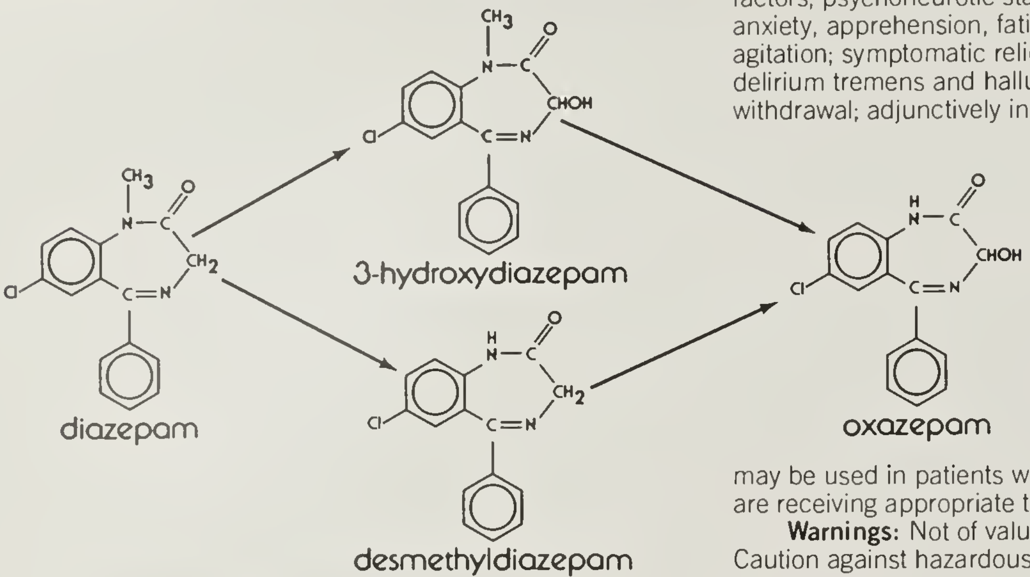

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**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

*Usage in Pregnancy:* **Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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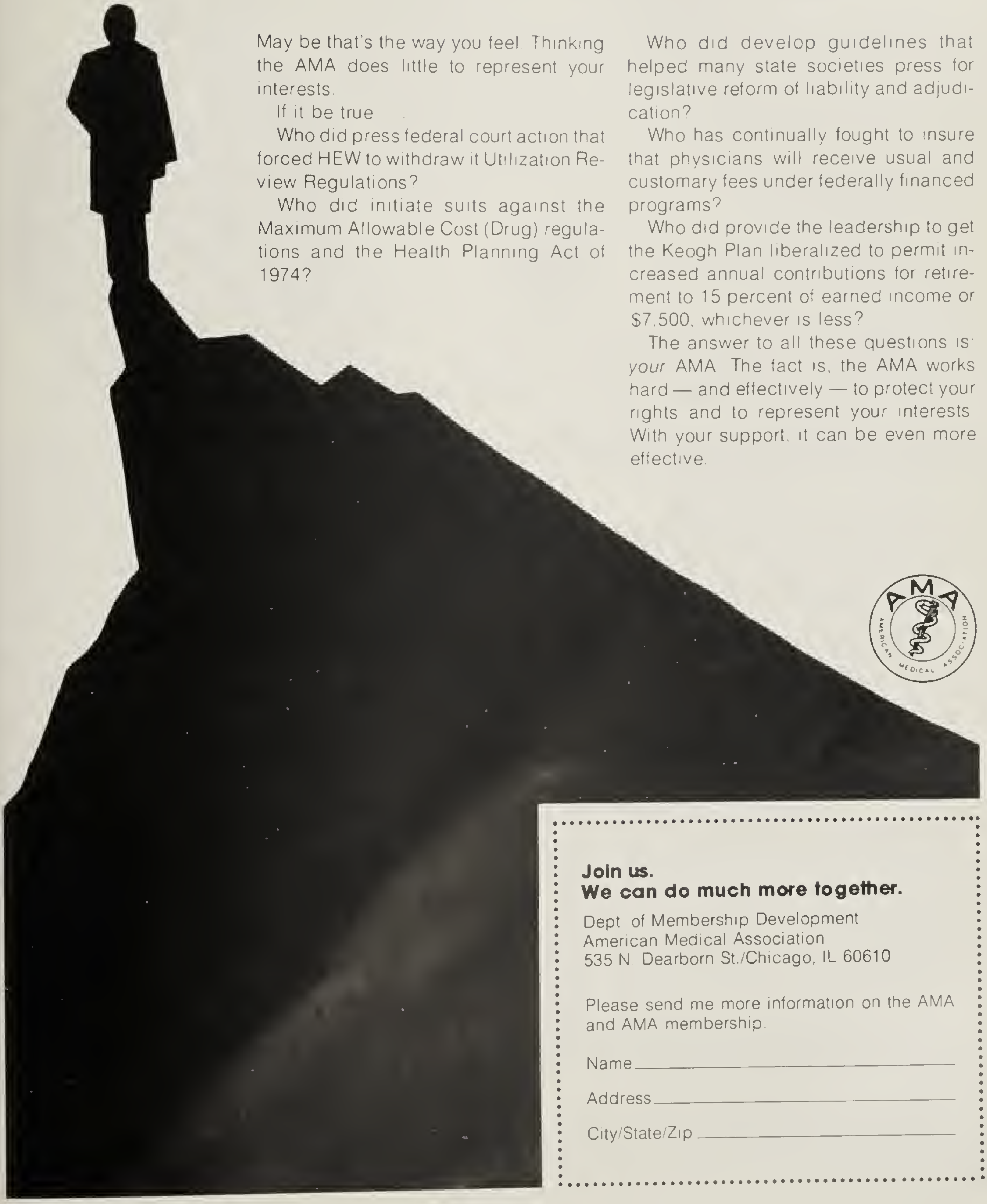

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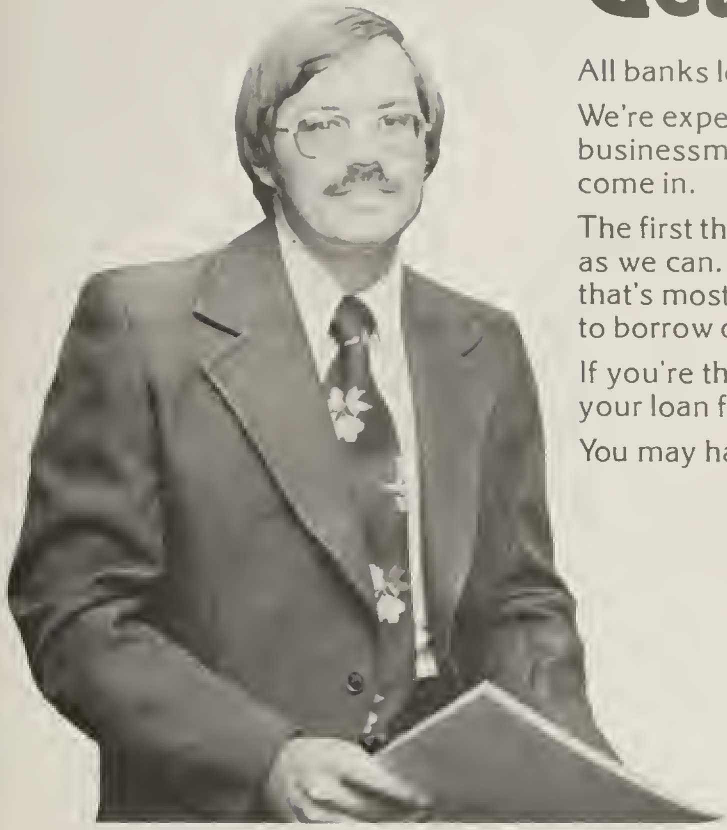

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*Illustration is for one unit. Two units may be purchased.*

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# consider the effect on coexisting diabetes when you prescribe a vasodilator*

(POSTERIOR VIEW OF PANCREAS)

## no interference in the management of the diabetic patient has been reported with

# VASODILAN®

## (ISOXSUPRINE HCl)

**the compatible vasodilator** TABLETS, 20 mg.

***Indications:** Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, the FDA has classified the indications as follows:

Possibly Effective:

1. For the relief of symptoms associated with cerebral vascular insufficiency
2. In peripheral vascular disease of arteriosclerosis obliterans, thromboangiitis obliterans (Buerger's Disease) and Raynaud's disease.

Final classification of the less-than-effective indications requires further investigation.

**Composition:** Vasodilan tablets, isoxsuprine HCl, 10 mg. and 20 mg. Vasodilan injection, isoxsuprine HCl, 5 mg., per ml.

**Dosage and Administration:** Oral: 10 to 20 mg., three or four times daily Intramuscular: 5 to 10 mg.(1 or 2 ml.) two or three times daily Intramuscular administration may be used initially in severe or acute conditions.

**Contraindications and Cautions:** There are no known contraindications to oral use when administered in recommended doses Should not be given immediately postpartum or in the presence of arterial bleeding

Parenteral administration is not recommended in the presence of hypotension or tachycardia

Intravenous administration should not be given because of increased likelihood of side effects.

**Adverse Reactions:** On rare occasions oral administration of the drug has been associated in time with the occurrence of hypotension, tachycardia, nausea, vomiting, dizziness, abdominal distress, and severe rash. If rash appears the drug should be discontinued.

Although available evidence suggests a temporal association of these reactions with isoxsuprine, a causal relationship can be neither confirmed nor refuted

Administration of single dose of 10 mg. intramuscularly may result in hypotension and tachycardia. These symptoms are more pronounced in higher doses. For these reasons single intramuscular doses exceeding 10 mg. are not recommended Repeated administration of 5 to 10 mg. intramuscularly at suitable intervals may be employed

**Supplied:** Tablets, 10 mg., bottles of 100, 1000, 5000 and Unit Dose, Tablets, 20 mg., bottles of 100, 500, 1000, 5000 and Unit Dose, Injection, 10 mg per 2 ml. ampul, box of six 2 ml ampuls.

U S Pat No 3,056,836

Mead Johnson LABORATORIES

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# All oral bronchodilators are pretty much the same. Right? Wrong!

The difference is in their action—both before and after symptoms begin. That's the reason for TEDRAL®.

- ☐ effective and prolonged bronchodilation from the synergistic effect of ephedrine and theophylline
- ☐ β-ADRENERGIC ACTION RELAXES BRONCHIAL SMOOTH MUSCLE
- ☐ α-ADRENERGIC ACTION REDUCES BRONCHIAL EDEMA AND SECRETIONS
- ☐ dosage forms to meet individual patient needs

For proven performance...

**Tedral® / Tedral® SA / Tedral® Elixir**

**Tedral®**: Each tablet contains 130 mg theophylline, 24 mg ephedrine hydrochloride and 8 mg phenobarbital

**Tedral® SA**: Each tablet contains 180 mg anhydrous theophylline (90 mg in the immediate release layer and 90 mg in the sustained release layer), 48 mg ephedrine hydrochloride (16 mg in the immediate release layer and 32 mg in the sustained release layer), and 25 mg phenobarbital in the immediate release layer

**SUSTAINED ACTION**

**Tedral® Elixir**: Each 5 ml teaspoonful contains 32 5 mg theophylline, 6 mg ephedrine HCl, and 2 mg phenobarbital, the alcohol content is 15%

See next page for brief summary

**WARNER/CHILCOTT**
Division, Warner-Lambert Company
Morris Plains, New Jersey 07950

T-GP-72-B/W

**TEDRAL®**

**TEDRAL® SA Sustained Action**

**TEDRAL® Elixir**

CAUTION: Federal law prohibits dispensing Tedral SA without prescription.

**Description.** Tedral: each tablet contains 130 mg theophylline, 24 mg ephedrine hydrochloride, and 8 mg phenobarbital.

Tedral SA: each tablet contains 180 mg anhydrous theophylline (90 mg in the immediate release layer and 90 mg in the sustained release layer); 48 mg ephedrine hydrochloride (16 mg in the immediate release layer and 32 mg in the sustained release layer); 25 mg phenobarbital in the immediate release layer.

Tedral Elixir: each 5 ml teaspoonful contains 32.5 mg theophylline, 6 mg ephedrine hydrochloride, and 2 mg phenobarbital; the alcohol content is 15%.

**Indications.** Tedral, Tedral SA, and Tedral Elixir are indicated for the symptomatic relief of bronchial asthma, asthmatic bronchitis, and other bronchospastic disorders. They may also be used prophylactically to abort or minimize asthmatic attacks and are of value in managing occasional, seasonal or perennial asthma.

Tedral SA (Sustained Action) offers the convenience of b.i.d. dosage.

Tedral Elixir is convenient for persons who may have difficulty in swallowing tablets.

These Tedral formulations are adjuncts in the total management of the asthmatic patient. Acute or severe asthmatic attacks may necessitate supplemental therapy with other drugs by inhalation or other parenteral routes.

**Contraindications.** Sensitivity to any of the ingredients; porphyria.

**Warnings.** Drowsiness may occur. PHENOBARBITAL MAY BE HABIT-FORMING.

**Precautions.** Use with caution in the presence of cardiovascular disease, severe hypertension, hyperthyroidism, prostatic hypertrophy, or glaucoma.

**Adverse Reactions.** Mild epigastric distress, palpitation, tremulousness, insomnia, difficulty of micturition, and CNS stimulation have been reported.

**Average Dosage.** *Prophylactic or Therapeutic.*

Tedral: *Adults*—One or two tablets every 4 hours. *Children*—(Over 60 lb) one-half the adult dose.

Tedral SA: *Adults*—One tablet on arising and one tablet 12 hours later. Tablets should not be chewed. *Children*—Not established for children under 12.

Tedral Elixir: Note: One teaspoonful is equivalent to *one-quarter* Tedral tablet. *Children*—One teaspoonful per 30 lb body weight, every 4-6 hours, unless prescribed otherwise by physician. Should be given to children under 2 years of age only with extreme caution. *Adults*—One to two tablespoonfuls every four hours.

**Supplied.** Tedral: White, uncoated scored tablets in bottles of 24 (N 0047-0230-24), 100 (N 0047-0230-51) and 1000 (N 0047-0230-60). Also in Unit Dose—package of 10 x 10 strips (N 0047-0230-11).

Tedral SA: Double-layered, uncoated, coral/mottled white tablets in bottles of 100 (N 0047-0231-51) and 1000 (N 0047-0231-60). Also in Unit Dose—package of 10 x 10 strips (N 0047-0231-11).

Tedral Elixir: Dark red and cherry-flavored in 474 ml (16 fl oz) bottles (N 0047-0242-16).

STORE BETWEEN 59° and 86°F (15° and 30°C).

Full information is available on request.

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# How much is "too much" milk?

Milk, like many foods today, is being looked at much more closely than ever before by physicians and nutritionists.

And well it should be.

Because we recognize that too much milk, like too much of any one food, can fill a child up and consequently, can keep him from eating other foods he needs. Particularly, iron-rich foods.

But let's also make sure children get enough milk. Because milk supplies more essential nutrients per calorie than most other foods.

A child between the ages of six months and six years, for example, can get at least three-fourths of his daily dietary allowance for calcium, riboflavin, vitamins D and $B_{12}$, phosphorous, and protein from just three glasses of milk. And milk is also a good source of vitamins A and $B_6$, as well as thiamin and niacin.

That's why the U.S.D.A., acting on the recommendation of the National Research Council—National Academy of Sciences, has established these guidelines for milk consumption:

| Children up to 6 years | Children 6 to 12 years |
|---|---|
| Two to three 8 oz. glasses per day. | Three or more 8 oz. glasses per day. |

For a free copy of the Dairy Council Digest issue titled, "Composition and Nutrient Value of Dairy Foods," contact Dairy Council of Arizona: 2008 South Hardy Drive, Tempe, Arizona 85282, Phone: 968-7814; or 4625 E. Ft. Lowell Road, #107, Tucson, Arizona 85712, Phone: 795-5759.

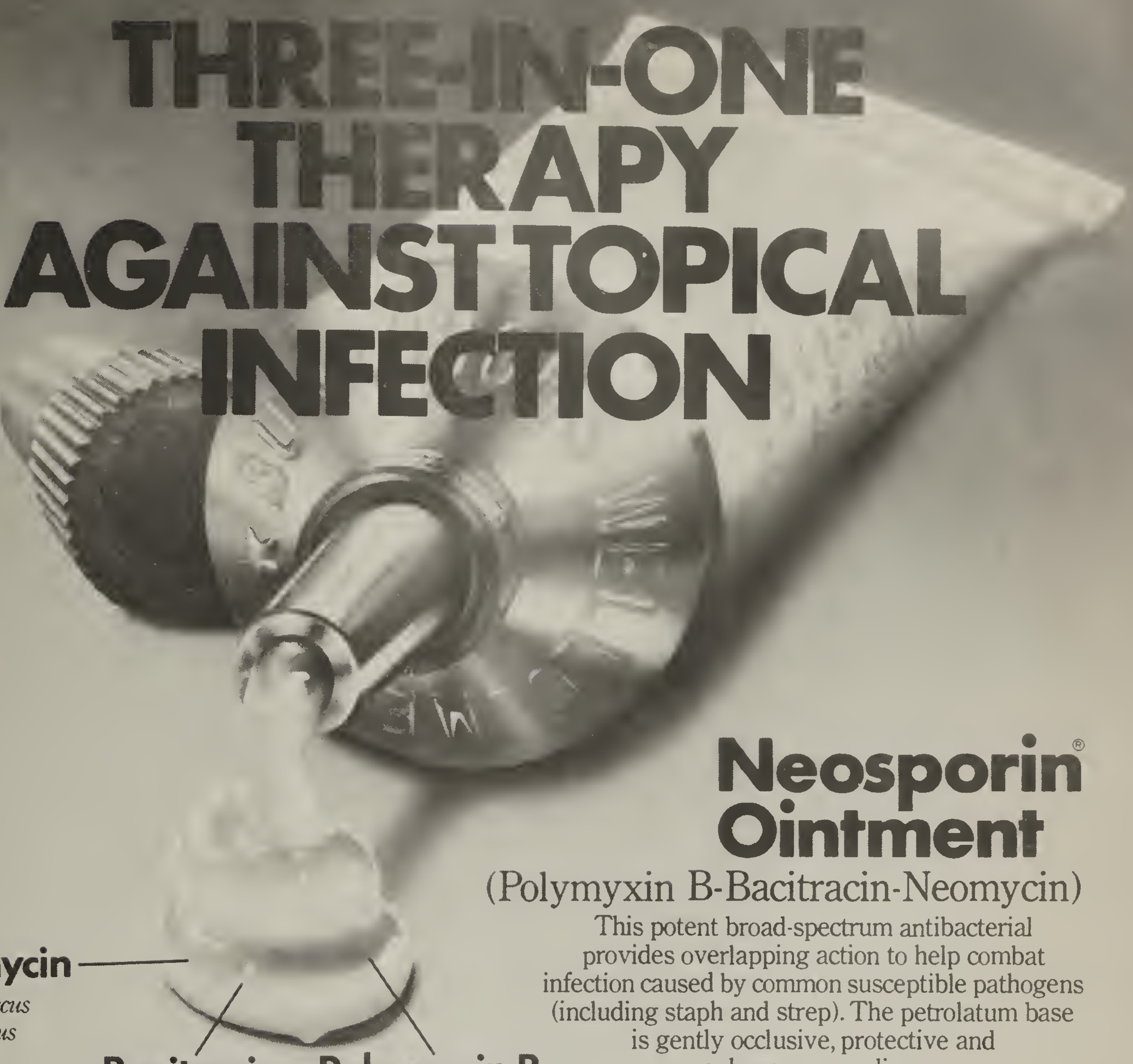
**Per cent of Recommended Daily Allowance contributed by three 8 oz. glasses of fortified milk.**

| | 6 mos.—1 yr. | 1 yr.—3 yrs. | 3 yrs.—6 yrs. |
|---|---|---|---|
| Calcium | 100% | 100% | 100% |
| Riboflavin | 100 | 100 | 100 |
| Vitamin $B_{12}$ | 100 | 100 | 100 |
| Protein | 100 | 100 | 80 |
| Phosphorus | 100 | 85 | 85 |
| Vitamin $B_6$ | 76 | 51 | 34 |
| Vitamin D | 75 | 75 | 75 |
| Niacin* | 71 | 63 | 47 |
| Thiamin | 56 | 40 | 31 |
| Vitamin A | 46 | 46 | 37 |

*maximum niacin equivalents based on:
60 mg tryptophan=1 mg niacin

**DAIRY COUNCIL OF ARIZONA**

**Milk. Sometimes we forget all the good things it does.**



## Neosporin® Ointment

(Polymyxin B-Bacitracin-Neomycin)

This potent broad-spectrum antibacterial provides overlapping action to help combat infection caused by common susceptible pathogens (including staph and strep). The petrolatum base is gently occlusive, protective and enhances spreading.

| **Neomycin** | **Bacitracin** | **Polymyxin B** |
|---|---|---|
| *Staphylococcus* | *Staphylococcus* | *Pseudomonas* |
| *Haemophilus* | *Corynebacterium* | *Haemophilus* |
| *Klebsiella* | *Streptococcus* | *Klebsiella* |
| *Aerobacter* | *Pneumococcus* | *Aerobacter* |
| *Escherichia* | | *Escherichia* |
| *Proteus* | | |
| *Corynebacterium* | | |
| *Streptococcus* | | |
| *Pneumococcus* | | |

*In vitro* overlapping antibacterial action of Neosporin® Ointment (polymyxin B-bacitracin-neomycin).

Wellcome

Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

---

## Neosporin® Ointment

(Polymyxin B-Bacitracin-Neomycin)

Each gram contains: Aerosporin® brand Polymyxin B Sulfate 5,000 units; zinc bacitracin 400 units; neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

**WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

**PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

**ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

250
170
150
130
90

# When choosing a diuretic for day-in-day-out hypertension control with comfortable compliance...

The agent you choose in mild to moderate essential hypertension should offer (1) long-term effectiveness, (2) patient comfort, and (3) compliance.

## Zaroxolyn offers all three.

**Effectiveness:** In several long-term studies[1,2,3] Zaroxolyn brought moderately elevated blood pressure (average 167/113 mm Hg) down to the range of normotension—and held it there for up to four years.

**Comfort-in-use:** One investigator noted, "Patient cooperation was surprisingly good for a study of such duration. The once-daily schedule with metolazone (Zaroxolyn) no doubt contributed to patient compliance."

**Overall compliance** with Zaroxolyn is good—very good. An analysis of controlled clinical studies involving 188 Zaroxolyn patients showed that only eight discontinued therapy because of side effects. That's a discontinuation rate of only 4.3%, and broader clinical experience appears to substantiate this low rate.[3]

## Long-acting

# Zaroxolyn®

## (metolazone) Pennwalt

2½ mg, 5 mg and 10 mg tablets

## once-daily antihypertensive diuretic

### Recommended initial dosage in mild to moderate essential hypertension–2½ to 5 mg once daily

Before prescribing, see complete prescribing information in the package insert, or in PDR, or available from your Pennwalt representative The following is a brief summary **Indications:** Zaroxolyn (metolazone) is an antihypertensive diuretic indicated for the management of mild to moderate essential hypertension as sole therapeutic agent and in the more severe forms of hypertension in conjunction with other antihypertensive agents. Also, edema associated with heart failure and renal disease. **Contraindications:** Anuria, hepatic coma or precoma; allergy or hypersensitivity to Zaroxolyn Or, as a routine in otherwise healthy pregnant women **Warnings:** In theory cross-allergy may occur in patients allergic to sulfonamide-derived drugs, thiazides or quinethazone Hypokalemia may occur, and is a particular hazard in digitalized patients; dangerous or fatal arrhythmias may occur Azotemia and hyperuricemia may be noted or precipitated Considerable potentiation may occur when given concurrently with furosemide When used concurrently with other antihypertensives, the dosage of the other agents should be reduced Use with potassium-sparing diuretics may cause potassium retention and hyperkalemia Administration to women of childbearing age requires that potential benefits be weighed against possible hazards to the fetus Zaroxolyn appears in the breast milk Not for pediatric use **Precautions:** Perform periodic examination of serum electrolytes. BUN, uric acid, and glucose Observe patients for signs of fluid or electrolyte imbalance These determinations are particularly important when there is excessive vomiting or diarrhea, or when parenteral fluids are administered Patients treated with diuretics or corticosteroids are susceptible to potassium depletion Caution should be observed when administering to patients with gout or hyperuricemia or those with severely impaired renal function Hyperglycemia and glycosuria may occur in latent diabetes Chloride deficit and hypochloremic alkalosis may occur. Orthostatic hypotension may occur. Dilutional hyponatremia may occur in edematous patients in hot weather. **Adverse Reactions:** Constipation, nausea, vomiting, anorexia, diarrhea, bloating, epigastric distress, intrahepatic cholestatic jaundice, hepatitis, syncope, dizziness, drowsiness, vertigo, headache, orthostatic hypotension, excessive volume depletion, hemoconcentration, venous thrombosis, palpitation, chest pain, leukopenia, urticaria, other skin rashes, dryness of mouth, hypokalemia, hyponatremia, hypochloremia, hypochloremic alkalosis, hyperuricemia, hyperglycemia, glycosuria, raised BUN or creatinine, fatigue, muscle cramps or spasm, weakness, restlessness, chills, and acute gouty attacks **Usual Initial Once-Daily Dosages:** mild to moderate essential hypertension—2½ to 5 mg, edema of cardiac failure—5 to 10 mg, edema of renal disease—5 to 20 mg. Dosage adjustment may be necessary during the course of therapy **How Supplied:** Tablets, 2½, 5 and 10 mg

**References:**

1 Dornfeld L, Kane R. Metolazone in essential hypertension The long-term clinical efficacy of a new diuretic. *Curr Ther Res* **18**:527-533, 1975

2 Cangiano JL: Effects of prolonged administration of metolazone in the treatment of essential hypertension. *Curr Ther Res* **20** 745-750, 1976

3 Data on file: Medical Department, Pennwalt Prescription Products

**PENNWALT**

Pennwalt Prescription Products
Pharmaceutical Division
Pennwalt Corporation
Rochester New York 14603

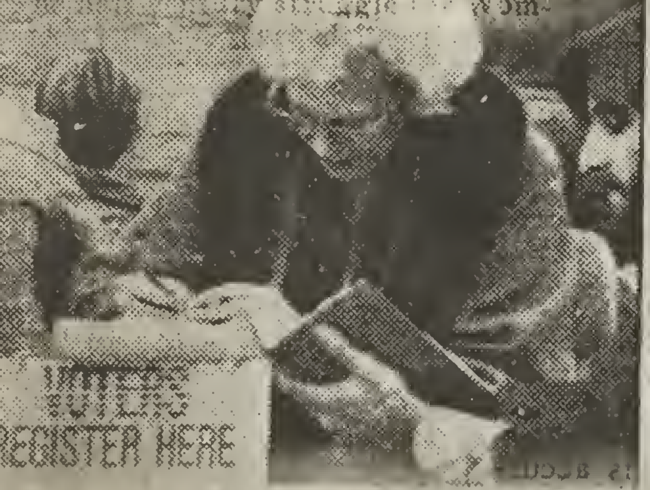
# COLBY PROCLAIMS WOMAN SUFFRAGE

### Signs Certificate of Ratification at His Home Without Women Witnesses.

### MILITANTS VEXED AT PRIVACY.

### Wanted Movies of Ceremony, But Both Factions Are

WASHINGTON, Aug. 26, 1920—[illegible] struggle [illegible] Wom-



# Social Security Bill Is Signed; Gives Pensions to Aged, Jobl

### Roosevelt Approves Message Intended to Benefit 30,00 Persons When States Adopt Cooperating Laws—He Ca the Measure 'Cornerstone' of His Economic Program

WASHINGTON, Aug. 14, The Social Security Bill, pro a broad program of unemplo insurance and old age per and counted upon to benefit 20,000,000 persons, became la day when it was signed by dent Roosevelt in the prese those chiefly responsible fo ting it through Congress.

Mr. Roosevelt called the me "the cornerstone in a stru which is being [illegible] me[illegible] comple

# SENATE APPROVES 18-YEAR OLD VOTE IN ALL ELECTIONS

### Amendment to Constitution is Sent to House, Where Passage is Expected

WASHINGTON, March 10, 1971—The Senate approved today, 94 to 0, and sent t [illegible]

# TRUMAN CLOSES TED NATIONS CONFEREN ITH PLEA TO TRANSLATE CHARTER INTO DEEDS

### NEW WORLD HOPE

### President Hails 'Great Instrument of Peace,' Insists It Be Used

### HISTORIC LANDMARK

### Meeting Gives Standing Ovation as Executive Pictures Peace Gain

"If we fail to use it," he declared to the solemn final meeting of the delegates, 'we shall betray all of those who have died in order that we might meet here in freedom and safety to create it.'

"If we seek to use it selfishly—for the advantage of any one nation or any small group of nations—we shall be equally guilty of that betrayal."

#### Fervent Interpolation

The President, speaking in the auditorium of the War Memorial Opera House, built in memory of sons of the Golden Gate city who gave their lives in the first World War, in which he himself served, seemed to give unconscious expression to the solemn feeling of the occasion when, at the outset of his speech, he interpolated the words, half a hope, half a prayer:

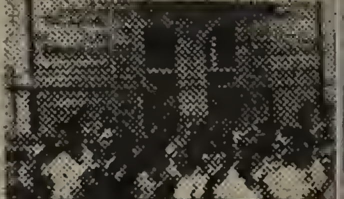
"Oh, what a great day this can be in history!"

Just before the plenary session the President accompanied the

COM

# UL SIGNE the Draf Ends No

WASHINGTON, Jan. 27, 1973—"With the signing of the peace agreement in Paris today, and after receiving a report from the Secretary of the Army that



# PATIENT PACKAGE INSERTS: A CONCEPT WHOSE TIME HAS COME?

*The consumer's right to know is an irreversible and desirable trend of the Seventies. It extends, and properly, to a patient's right to know more about his or her prescription medications. One way, gaining favor, is through patient package inserts. Wisely-prepared and properly distributed when medically indicated, they could markedly improve patient knowledge and drug therapy—laudable goals by anyone's standards.*

*The PMA endorses these goals and will work with government, the health professions and consumers to achieve them.*

## The Advantages

The concept holds promise of benefits: better patient understanding of the product prescribed, better adherence to the treatment plan, and more awareness of possible side reactions.

Every doctor has had patients who fail to finish antibiotic regimens because they feel better. Some patients assume that if one tranquilizer or analgesic is good, two may be twice as good. Still others fail to report dizziness while on antihypertensive therapy —and so on.

Problems like these might arise less often if the patient received written information in addition to verbal instructions. Some studies suggest that patients are more receptive to such materials, and they more often understand the verbal instructions and follow them, when inserts are used.

## The Disadvantages

There are also some potential problems. Obviously, the inserts must be clearly phrased, without extraneous or complex detail. How much information is enough? How can it be kept current? Should all patients receive the same information? Should inserts be included with all drugs? Should only potential problems be listed or are patients better off with a "fair balance" presentation that describes usefulness as well as drawbacks?

These and similar questions require answers, since model inserts have yet to be properly developed and tested. Despite the need for these studies, the FDA is proceeding prematurely with inserts on selected products. We think the Congress is the only place where the matter can be given the proper legal status and direction, particularly since it represents a conceptual change in the legal, medical and social framework of the nation's prescription drug information system.

## The Solution

The PMA believes that carefully-devised pilot studies of various kinds of inserts are needed. They should be developed and implemented with full participation by doctors, pharmacists, consumers, communications experts and the drug industry. Such studies will provide reliable pathways to follow, so that inserts will be useful aids to medical practice.

And particularly we think that you should be closely involved in this debate and in these studies and decisions. Otherwise, people with less experience and qualifications may control the purposes, content and use of a tool with considerable promise for improved patient care. It could make a difference in your practice tomorrow, and more importantly, in the health of your patients.

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THE PHARMACEUTICAL MANUFACTURERS ASSOCIATION
1155 FIFTEENTH ST, N W, WASHINGTON, D C 20005

# Consider the advantages of leasing your next car:

**Lower initial cash outlay.**
That's the first advantage of leasing under the Valley Bank Leasing Program. After you sign your lease, all you give us is first monthly payment and a deposit equal to another monthly payment, plus sales tax and a current license fee. Leaving more of your money for personal or business use—inventory, capital improvements, investments.

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**Valley National Bank Leasing Program.**
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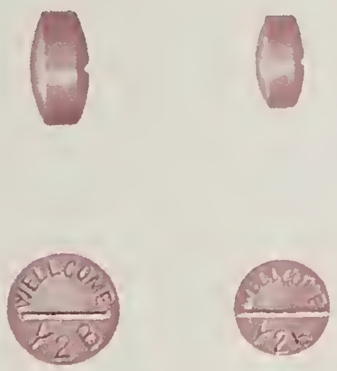
# New tablet size announcement

**Septra®**
Each tablet contains:
80 mg trimethoprim and
400 mg sulfamethoxazole

OLD SIZE: NEW SIZE:



**Septra® DS**
Each tablet contains.
160 mg trimethoprim and
800 mg sulfamethoxazole

OLD SIZE: NEW SIZE:

# B.W. Co.® has made Septra and Septra DS easier to swallow

Wellcome
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North Carolina 27709

**Kefzol® I.M. / I.V.**
**cefazolin sodium**

Ampoules, equivalent to 500 mg., 1 Gm.,
and 10 Gm. of cefazolin

Lilly

700773

*Additional information available to the profession on request.*
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Indianapolis, Indiana 46206

Cardiology

# Mitral Valve Prolapse: A Review

Sergio Alvarez, M.D.
Philippe Reyns, M.D.
Kenneth B. Desser, M.D.
Alberto Benchimol, M.D.

The advent of echocardiography and appreciation of the clinical significance of non-ejection systolic clicks has ushered in the era of mitral valve prolapse. Currently this syndrome may be the most frequently identified cardiac abnormality in women presenting with chest pain, palpitations or a hostory of abnormal cardiac auscultation. The purpose of this paper is to review the salient features of mitral valve prolapse. A multitude of names have been applied to the syndrome, largely based on local lexicon. Such rubrics include: "midsystolic click-late systolic murmur", "non-ejection systolic click", "Barlow's syndrome", "mitral valve ballooning", "floppy mitral valve" and "billowing mitral valve". Unfortunately, provincial patois and dogma has evoked inexplicably tendentious polarization in some prolapse circles and the nomenclature itself can defy the imagination of the most astute semanticist. Since echographic or angiographic posterior motion of the mitral valve scallops is the hallmark of this pathologic state it is befitting that the term "mitral valve prolapse" be applied. This concept is not merely a philological exercise since prolapse may be operative in subjects without abnormal auscultatory findings and when present, the ephemeral clicks and murmurs may occupy various phases of ventricular systole.

**Historical Considerations**

Initially described in 1887, the mid-systolic click was ascribed to an extracardiac source and for the subsequent seven decades this auscultatory finding was considered to be of dubious significance.

In 1961 Reid proposed the mitral origin of this sound[1] and in 1963 Barlow provided angiographic evidence of late systolic posterior mitral leaflet prolapse. Additionally, mitral regurgitation was correlated with a late systolic murmur[2,3]. Consequently, a wide range of myocardial contraction abnormalities were described in association with mitral valve prolapse[4]. It is currently unclear as to whether or not these asynergic left ventricular segments are an integral feature of the syndrome or simply arise as secondary events. The introduction of echocardiography provided a profound impetus for the non-invasive assessment of prolapse and recognition of the syndrome in patients with atypical chest pain previously considered to be of psychosomatic origin.

**Functional Anatomy**

Normal function of the mitral valve apparatus requires correlated function of its anatomic elements, namely: 1) The mitral annulus, 2) the leaflets, 3) the chordae tendineae, 4) the papillary muscles and 5) normal contraction pattern of the left ventricle[5]. A competent mitral valve requires systolic contraction of the annulus to about 66% of its diastolic diameter, intact leaflets, normal chordae well distributed to the leaflets, and synchronized contraction of left ventricular and papillary muscle elements. Functional or

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From: The Institute for Cardiovascular Diseases, Good Samaritan Hospital 1033 East McDowell Road, Phoenix, Arizona 85006. Supported by the E. Nichol's Memorial Fund and The Institute for Cardiovascular Diseases, Inc. Reprints: Alberto Benchimol, M.D., Good Samaritan Hospital, P. O. Box 2989, Phoenix, Arizona 85062.

pathologic change of any structure may disrupt this orderly process and produce mitral regurgitation. The mitral valve is comprised of anterior and posterior leaflets. The posterior mitral leaflet is attached to two-thirds of the annulus and formed in the majority of cases by three scallops. These scallops have been named according to their location to wit: antero-lateral, medial, and postero-medial. The location and number of scallops prolapsing during systole are major determinants of mitral regurgitation[6]. In subjects with "idiopathic" mitral valve prolapse the usual pathologic findings are: 1) voluminous scallop leaflets, 2) myxomatous degeneration of the valve with deposition of mucopolysaccharides and condroitin sulfate and 3) absence of inflammatory changes. In accordance with the law of La Place, any force applied against the mitral valve leaflet will be directly related to the surface area of the latter structure.

### Clinical Manifestations

It is of paramount importance that cardiac auscultation be performed in four different patient positions: supine, left lateral decubitus, sitting and standing. Any maneuver which reduces venous return or left ventricular cavity size will accentuate prolapse because of enhanced chordal slackening. Assumption of erect posture may: 1) result in appearance of a click or murmur, 2) accentuate either of the latter, 3) cause the non-ejection click to move closer to the first heart sound and 4) evoke transition of a late systolic murmur to a pansystolic configuration. The clinical manifestations of this entity are manifold yet the vast majority of affected patients are asymptomatic. Symptomatic subjects commonly present with retrosternal or left anterior chest pain brought on by emotional upsets or effort. Such discomfort may last a matter of seconds or exacerbate over several hours. In a minority of cases the chest pain is identical to that of angina pectoris with retrosternal origin, radiation to the jaw and upper extremities, effort induction and relief on rest. Dyspnea and fatigue are present in at least 50% of symptomatic cases. Palpitations are frequently described. Lightheadedness, not necessarily related to cardiac dysrhythmia, is encountered in approximately 30% of affected subjects and neuropsychiatric disorders in 15%. Unfortunately, a significant percentage of the latter group may have been iatrogenically engendered since many women with atypical chest pain, palpitations and lightheadedness, in whom the syndrome remained unidentified, were previously told that their symptoms were not based on objective cardiac findings.

### Electrocardiographic Features

Cardiac arrhythmias, S-T segment and T wave abnormalities are the most frequent electrocardiographic features associated with this syndrome. T wave inversion and S-T segment depression are more commonly observed in leads II, III, aVF and V4-6 and these alterations have been ascribed to tension on the posterior papillary muscle. Similar repolarization changes over the anterior and right precordial lead may be noted in patients with anterior mitral leafle prolapse. On occasion, prolongation of the Q- interval is recorded in subjects with mitral valv prolapse. Prodigious lengthening of this interval ca predispose to re-entrant tachyarrhythmias. A divers variety of cardiac rhythm disturbances have bee noted in the setting of mitral valve prolapse. The mos commonly observed arrhythmia is unifocal or multi form premature ventricular beats. Recurrent supra ventricular and ventricular tachycardias are th exception rather than the rule and the "common association is a function of case reporting from th larger pool of patients with prolapse. Atrioventricula conduction disturbances are infrequently documented Interestingly, a small but significant minority c patients referred to Duke University for possibl operative intervention of ventricular pre-excitatio had mitral valve prolapse. Patients with the syndrom may have positive exercise electrocardiograms.

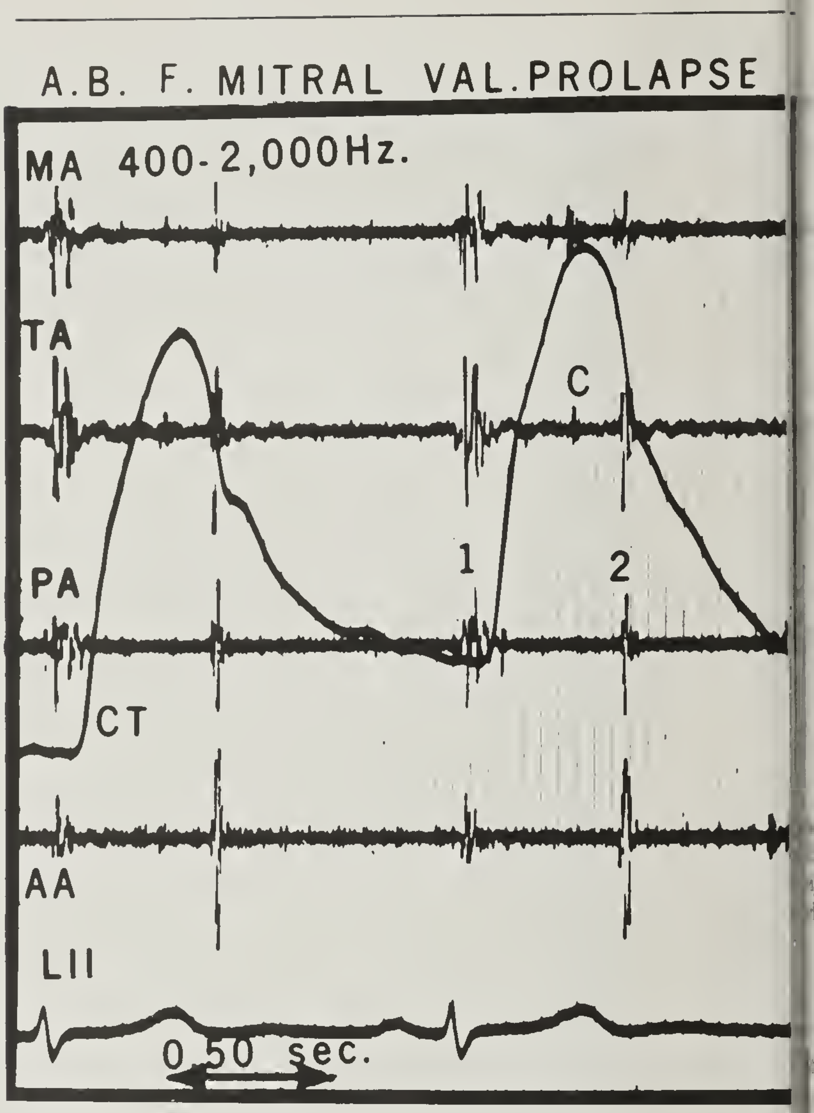

Figure 1:
Phonocardiograms of mitral (MA), tricuspid (TA), pulmonic (P and aortic areas (AA), external carotid pulse tracing (CT) and le II (LII) of the electrocardiogram in a patient with mitral val prolapse. Prominent midsystolic clicks (C) are best recorded at t mitral and tricuspid areas.

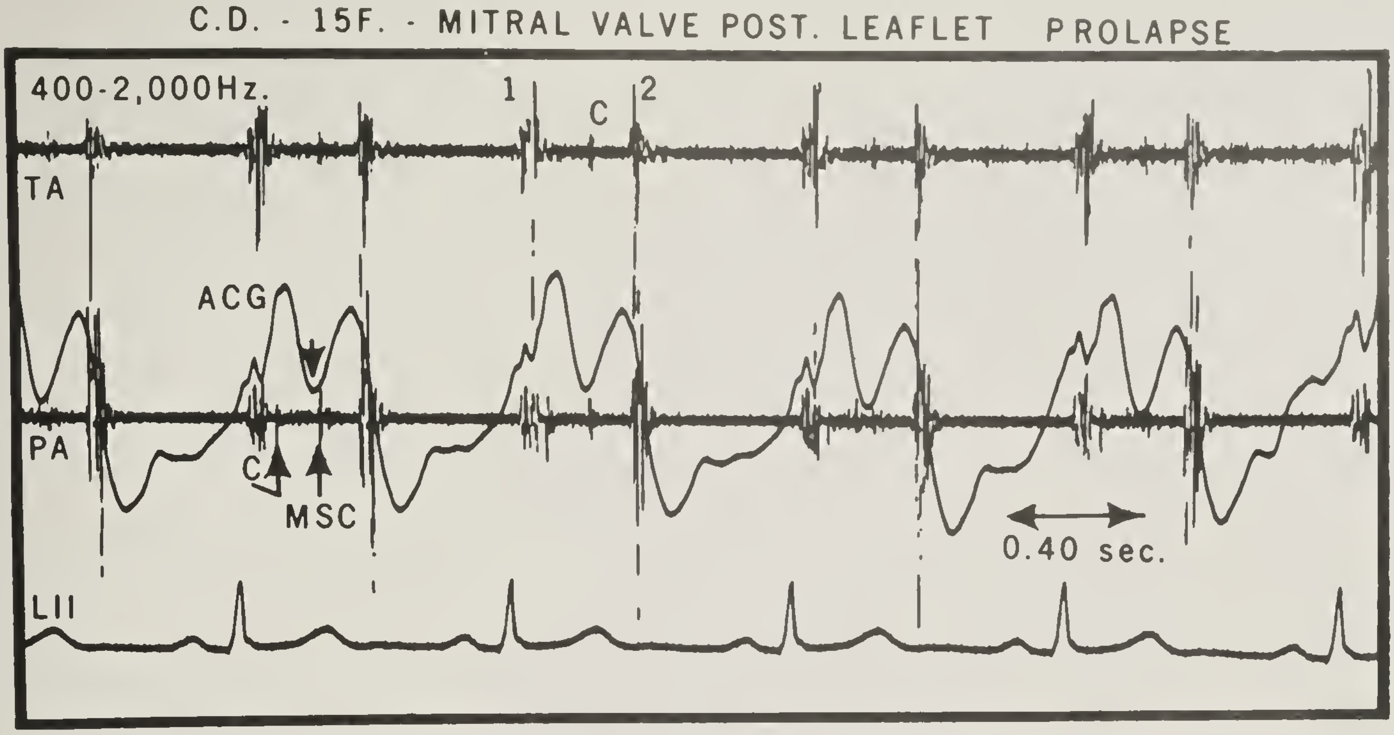

Figure 2:
honocardiograms and apexcardiogram (ACG) in a 15 year old girl ith mitral valve prolapse. The midsystolic click is recorded in onjunction with a midsystolic retraction of the apex impulse. An arly systolic click is well recorded at the pulmonic area.

## chocardiographic and Phonocardiographic Findings

A mid-systolic click represents the hallmark of rolapse on phonocardiographic recordings, (Figure ). This transient occurs at the time of prolapse and is sually followed by a late systolic murmur of mitral egurgitation. Multiple clicks, early clicks, protoystolic and pansystolic murmurs have also been escribed. A diastolic sound resembling an opening nap is appreciated in some cases and has been nputed to be a high frequency acoustic event that the rolapsed leaflet creates during early diastole as it is orced back from the left atrium into the left ventricle. he apexcardiogram may reveal a mid-systolic reraction concurrent with recording of the click (Figure ). This mid-systolic retraction is also occasionally vident on the carotid tracing[7]. Characteristically, the chocardiogram shows posterior systolic displacement f the mitral valve, thereby resulting in a "bowing" or ammock-like effect. Echographic prolapse may be ate or pansystolic in duration, (Figure 3). In rare ases, midsystolic closure of the aortic valve may be bserved on the ultrasonic tracing[8].

## oentgenographic Manifestations

Bony abnormalities of the thorax have been bserved in patients with prolapse. Straightening of he vertebral column, pectus excavatum, and scoliosis ave been described in 30-40% of subjects. The ardiac silhouette is normal in uncomplicated cases. alcification of the mitral annulus is seen only in cases f Marfan's syndrome. Some subjects have lax joints nd can voluntarily subluxate their jaws, elbows, ingers, knees and toes.

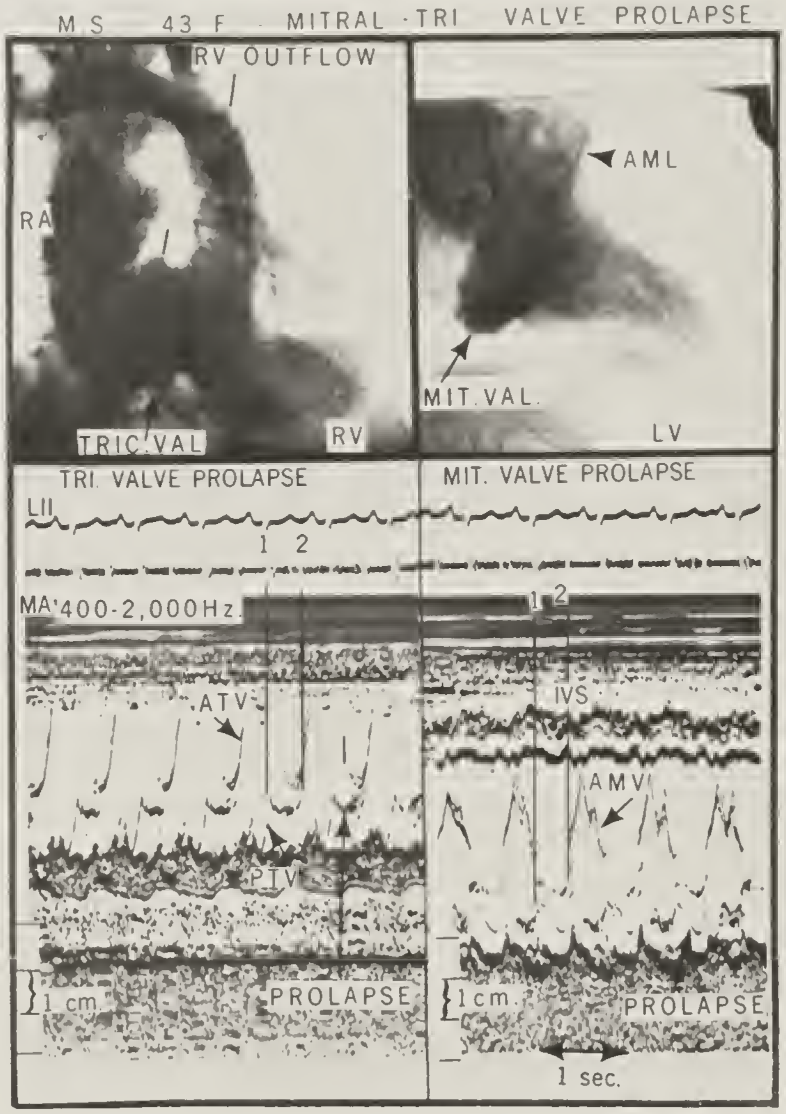

Figure 3:
Right and left ventricular angiograms and echocardiographic recording of the tricuspid and mitral valves in a 43 year old woman with prolapse of both A-V valves. Note systolic bulging of the tricuspid valve, mitral valve and anterior mitral leaflet on the angiograms. The echocardiogram shows typical posterior displacement of the tricuspid and mitral valves during systole. (RA = right atrium, RV = right ventricle, AML = anterior mitral leaflet, LV = left ventricle, MA = mitral area, ATV = anterior tricuspid valve, PTV = posterior tricuspid valve, IVS = interventricular septum, AMV = anterior mitral valve).

**Complications**

The natural history of this disease is unknown. Major complications arising as a direct consequence of the valvular disturbance include subacute bacterial endocarditis, gradually progressive mitral regurgitation, and chordal rupture. Cardiac arrhythmias have been invoked as a cause of sudden death in such patients, yet reported cases of true syncope in the absence of rhythm disturbance may indicate other inciting factors. Retinal vascular accidents and transient ischemic cerebral attacks, presumably secondary to thromboembolic phenomena, suggest alternate mechanisms for demise.

**Associated Cardiac Disorders**

Some investigators have enunciated the thesis that mitral valve prolapse represents a forme fruste of Marfan's syndrome. In contradistinction to Marfan's syndrome, mitral valve prolapse has a more benign course. The aortic root and valves are invariably normal in patients with mitral valve prolapse and a normal phenotype. On the other hand, subjects with overt Marfan's syndrome may have mitral valve prolapse and aortic root disease. Ostium secundum atrial septal defect has been found in approximately 5% of individuals with mitral valve prolapse. In one report of 218 patients with mitral valve prolapse who underwent coronary arteriograms, 6% had significant obstructive lesions, and it was concluded that the incidence did not exceed the expected association of two common diseases[9]. Studies from this laboratory showed the frequency of prolapse in coronary artery disease to be rather high, representing 60% of cases studied. The right coronary artery was the most commonly involved vessel[10]. In contrast to idiopathic mitral valve prolapse, most subjects with coronary artery disease did not have clicks, echographic evidence of mitral valve bowing, or angiographic evidence of mitral insufficiency. Co-existing mitral and tricuspid valve prolapse has been documented in the idiopathic variety.

**Treatment**

The management of asymptomatic patients requires discussion regarding the generally favorable outlook of this disease. In addition, special instructions should be given to these subjects concerning endocarditis prophylaxis prior to dental or surgical interventions.

For those patients with atypical chest pains and absence of risk factors for coronary artery disease, reassurance about the benignity of the symptoms should be given. Subjects with typical angina pectoris who are at risk for coronary artery disease may require cardiac catheterization to exclude significant coronary artery obstruction. In some patients, chest pain may remit with the use of nitroglycerin and long acting nitrates, yet the mechanism of action of these drugs in this setting remains unknown. Propranolol is the drug of choice in patients with frequent ventricular premature contractions and supraventricular tachycardias.

## Acknowledgements

We would like to acknowledge the technica assistance of Carole Crevier, Phyllis Reeves, Sydney Peebles and Kathleen Tustison.

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*INDICATIONS. Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

*Effective:* Management of nausea and vomiting and dizziness associated with motion sickness.

*Possibly Effective:* Management of vertigo associated with diseases affecting the vestibular system.

Final classification of the less than effective indications requires further investigation.

CONTRAINDICATIONS. Administration of Antivert (meclizine HCl) during pregnancy or to women who may become pregnant is contraindicated in view of the teratogenic effect of the drug in rats.

The administration of meclizine to pregnant rats during the 12-15 day of gestation has produced cleft palate in the offspring. Limited studies using doses of over 100 mg./kg./day in rabbits and 10 mg./kg./day in pigs and monkeys did not show cleft palate. Congeners of meclizine have caused cleft palate in species other than the rat.

Meclizine HCl is contraindicated in individuals who have shown a previous hypersensitivity to it.

WARNINGS. Since drowsiness may, on occasion, occur with use of this drug, patients should be warned of this possibility and cautioned against driving a car or operating dangerous machinery.

*Usage in Children:* Clinical studies establishing safety and effectiveness in children have not been done; therefore, usage is not recommended in the pediatric age group.

*Usage in Pregnancy:* See "Contraindications."

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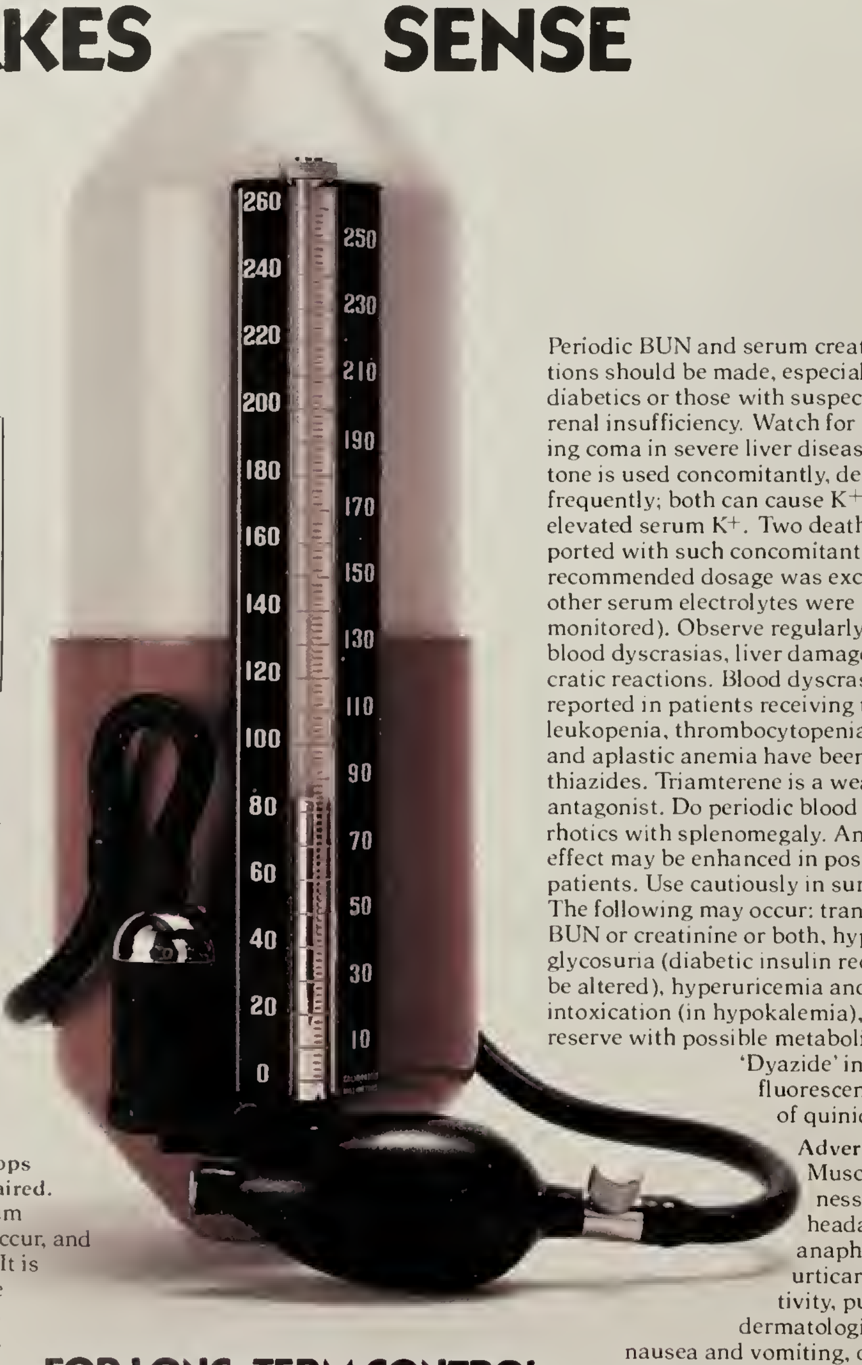

**Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. A brief summary follows:**

* Warning
This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

* **Indications:** When the combination represents the dosage determined by titration: Adjunctive therapy in edema associated with congestive heart failure, hepatic cirrhosis, the nephrotic syndrome. Corticosteroid and estrogen-induced edema, idiopathic edema; hypertension, when the potassium sparing action of triamterene is warranted. (See Box Warning.) Routine use of diuretics in healthy pregnant women is inappropriate; they are indicated in pregnancy only when edema is due to pathological causes.

**Contraindications:** Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings:** **Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired.** If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum $K^+$ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict $K^+$ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum $K^+$ frequently; both can cause $K^+$ retention and elevated serum $K^+$. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis.

'Dyazide' interferes with fluorescent measurement of quinidine.

**Adverse Reactions:** Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

**Supplied:** Bottles of 100 and 1000 capsules; Single Unit Packages of 100 (intended for institutional use only).

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**SERUM $K^+$ AND BUN SHOULD BE CHECKED PERIODICALLY.**
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# Drug Therapy Problems

Robert E. Pearson, R.Ph.

## Theophylline Affected by Smoking

A study of the effect of smoking on theophylline disposition was conducted on 28 subjects. The subjects were divided into three groups: a) non-smokers; b) heavy smokers (more than 15 cigarettes/day), and c) ex-smokers (no smoking during at least past two years). The half-life of theophylline in these subjects showed the effects of smoking as follows: the half-life for heavy smokers was 5.35 hours, ex-smokers 6.42 hours, and non-smokers 8.23 hours. Theophylline plasma concentration monitoring should be used to avoid treatment failure or toxicity.

Powell, J.R. (College of Pharmacy, University of Arizona, Tucson, AZ 85721), Thiercelin, J-F, Vozeh, S., Sansom, L., and Riegelman, S.: The Influence of Cigarette Smoking and Sex on Theophylline Disposition, **Amer Rev Resp Dis** 116: 17-23, 1977.

## Warfarin is OK in Breast Feeding

Two groups of women, one breast feeding, and both receiving warfarin were studied to determine if warfarin was excreted in clinically-appreciable amounts in breast milk. The results indicate that warfarin does not appear in breast milk and therefore, that mothers taking warfarin may safely breast feed their infants.

Orme, M.L'E., Lewis, P.J., Swiet, M. de, Serlin, M.J., Sibeon, R., Baty, J.D., and Breckenridge, A.M. (University of Liverpool, Liverpool L69 3BX, England): May Mothers Given Warfarin Breast Fed Their Infants?, **Brit Med J** 1: 1564-1565, 1977.

## Lithium & Diazepam = Hypothermia

A 38-year-old woman experienced profound hypothermia on three separate occasions while taking lithium carbonate and diazepam. Therapy with each agent alone produced no hypothermia. Each hypothermic epidsode occurred with a shorter time span from onset of therapy to onset of hypothermia. The three episodes occurred as follows: a) after 17 days of combined therapy her temperature fell from 35.4C to 32C over two hours, b) after 5 days of combined therapy her temperature fell from 35.5C to 30C over 8 hours, and c) after 36 hours of combined therapy her rectal temperature fell from 35.2C to 32.8C over 4 hours.

Naylor, G.J., and McHarg, A. (Royal Dundee Liff Hospital, Dundee, Scotland): Profound Hypothermia on Combined Lithium Carbonate and Diazepam Treatment, **Brit Med J** 1:22, 1977.

## Aspirin Helps Prevent Arterial Thromboembolism

A two year study of 148 patients with an implantation of a single Starr-Edwards Aortic Ball valve showed that aspirin added to oral anticoagulation provided significantly better protection against arterial thromboembolism than anticoagulants alone.

Dale, J. (Department of Thrombosis Research, Rikshospitalet, Oslo 1, Norway), Myhre, E., Storstein, O., Stormorken, H., and Efskind, L.: Prevention of Arterial Thromboembolism with Acetylsalicylic Acid, **Am Heart J** 94: 101-111, 1977.

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*Seminars in Endocrinology and Metabolism*

# Diagnosis of Thyrotoxicosis

Jerome H. Targovnik, M.D.

Editors:
Stephen E. Dippe, M.D.
Jerome Targovnik, M.D.

In recent years there have been major advances in the diagnosis of thyrotoxicosis. This article will review some of these.

**A total Serum Thyroxine (T4) and Free Thyroxine Index (FTI)**

Total serum $T_4$ can be measured by either competitive protein binding or by radioimmunoassay. Its measurement is not affected by exogenous iodine contained in x-rav contrast material and certain medications. A raised level of total $T_4$ in the serum is a good indication of thyrotoxicosis if those patients with thyroid hormone binding globulin abnormalities are eliminated. However, a normal level of serum $T_4$ does not exclude the diagnosis of hyperthyroidism, in view of the preferential secretion of $T_3$ in some hyperthyroid individuals with the condition known as $T_3$ toxicosis.

To overcome the difficulties involved in patients with abnormalities in thyroid hormone binding globulin, the Free Thyroxine Index has gained popularity. This is merely the product of total serum $T_4$ and the $T_3$ resin uptake, the later being an indicator of the number of free thyroxine binding sites available on its binding globulins. This product, $T_4$ multiplied by $T_3$ resin uptake, is an estimation of the amount of unbound or "free" thyroxine and so normalizes the results for changes in binding globulins.

**Total Serum Triiodothyronine**

Total serum $T_3$ can be measured by radioimmunoassay in unextracted serum and is an increasingly valuable test of thyroid function. There is a disproportionate increase in $T_3$ secretion in relation to $T_4$ in thyrotoxicosis. There is little overlap in $T_3$ serum levels between euthyroid and hyperthyroid individuals. $T_3$, like $T_4$, circulates in the blood bound primarily to thyroid binding globulin. In situations where elevated levels of this globulin are found, e.g., during pregnancy and taking oral contraceptives, elevations of total serum $T_3$ are noted. As $T_3$ is less tightly bound than $T_4$, the rise in serum $T_3$ due to increased thyroid binding globulins is less than is the rise of serum $T_4$. The calculation of a Free $T_3$ Index similar to the Free $T_4$ Index would normalize these values.

It is now evident that hypersecretion of $T_3$ may occur alone in hyperthyroidism, a condition known as $T_3$ thyrotoxicosis. The incidence of $T_3$ toxicosis may be as high as 10% of patients presenting with thyrotoxicosis for the first time. In addition, the serum $T_3$ may be a better indicator for relapse in thyrotoxicosis, rising weeks to months before there is an increase in serum $T_4$.

**Thyrotropin Releasing Hormone Test — (TRH)**

The thyroid gland is independent of endogenous TSH in all cases of thyrotoxicosis, and excess $T_3$ and/or $T_4$ is excreted as a result of stimulation by antibodies to the TSH receptor, LATS or LATS protector, or due to autonomous thyroid tissue. In the past, a $T_3$ suppression test was used to ascertain autonomous thyroid secretion, and this test discriminated effectively between an autonomous thyroid and a thyroid gland that was under normal physiological controls. The $T_3$ suppression test has two major drawbacks; it is time consuming, and it is potentially dangerous to patients with heart disease. This test has for all practical purposes been replaced by the TRH test, in which the ability of the pituitary gland to release TSH in response to an intravenous injection of Thyrotropin Releasing Hormone is measured. The ability of the pituitary gland to

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respond to TRH is a function of the level of circulating $T_3$ and/or $T_4$. Even small increases of these hormones above the patient's physiological set point will cause partial to complete suppression of TSH release in response to TRH. Values of TSH are measured at 0, 30 and 60 minutes after injection. This test, although measuring a different aspect of thyroid function, correlates extremely well with the $T_3$ suppression test and has none of its drawbacks.

**Thyroid Uptake**

This test had fallen into disfavor in the past few years because of the great variability in normal uptakes. With the recently described entity of "silent thyroiditis", a condition in which large amounts of thyroid hormone are released from a damaged gland resulting in transient hyperthyroidism, the thyroid uptake is the most reliable means of making this diagnosis. A low uptake (less than 5%) in the face of elevated serum thyroxine values confirms the diagnosis of "silent thyroiditis". It should be suspected in individuals who are clinically hyperthyroid with small thyroid glands.

I have attempted to review some of the more recent tests used in the diagnosis of thyrotoxicosis. With the judicious use of these tests, hyperthyroidism can be diagnosed at an earlier stage and with more certainty than has been possible in the past.

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AM Seminars in Gastroenterology and Liver Disease

# Indications for Laparoscopy (Peritoneoscopy) in the Evaluation of Liver Disease

George E. Burdick, M.D.

Editors:
Leon Rigberg, M.D.
Stephen Geouberman, M.D.
George Burdick, M.D.

Peritoneoscopy is slowly gaining an important place in the diagnosis of liver disease. The procedure was demonstrated to have clinical value as early as 1929 when Dr. Kalk published his observations on 100 patients.[1] However, peritoneoscopy has not been used to its full potential in the United States except in a few centers. In Europe peritoneoscopy has been a well established procedure for many years.

Probably the technical difficulty of the procedure and the lack of available instruction in our gastroenterology training centers partially accounts for the fact that most clinicians are still unfamiliar with the technique. More recently peritoneoscopy (laparoscopy) has gained enthusiastic support in the field of gynecology where it is used both for diagnosis and treatment. A number of important applications of peritoneoscopy in medical diseases of the abdomen have been published in recent years.

**PROCEDURE:**[2] The patient is premedicated with Demerol and Atropine and often given Valium during the procedure after insertion of the peritoneoscope. The patient is prepared and draped as for a surgical procedure of the abdomen. Site selection for the incision is very important and depends upon the area to be visualized, previous surgical procedures, and knowledge of the anatomy of important structures in the abdomen. The most frequent site is 2 cm below the unbilicus in the midline. This area is infiltrated with a local anesthetic to the peritoneum. A vertical incision approximately 1 cm in length is made and carried by blunt dissection to the fascia. A Verres needle is inserted into the peritoneal cavity and pneumoperitoneum carried out using either nitrous oxide or carbon dioxide. The size of the pneumoperitoneum is

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quite variable and varies anywhere from 2 to 6 liters. Once the appropriate tension of the abdominal wall is reached the trochar is inserted, the cannula removed, and the peritoneoscope placed. The abdominal cavity is thoroughly examined in all quadrants. If liver biopsies are obtained they can be done either through the peritoneoscope, if a surgical peritoneoscope is being used, or through a separate subcostal incision. An excellent needle for this purpose is the Vim-Trucutt needle which is long enough to reach the liver's surface while maintaining the pneumoperitoneum. The entire procedure takes 20-30 minutes. Post peritoneoscopy follow up is similar to that for liver biopsy.

**INDICATIONS FOR PROCEDURE:**

1. Differential diagnosis of abnormal liver function studies, particularly where a percutaneous biopsy fails to adequately explain clinical findings.
2. To obtain direct vision liver biopsy
    a. Suspected neoplasm
    b. Biopsy of the left lobe or other areas of the liver felt to be too dangerous to biopsy percutaneously.
3. Staging of lymphoma
4. Liver scan abnormalities
5. Evaluation of hepatoma and other primary liver neoplasms.
6. Evaluation of unexplained portal hypertension.
7. Evaluation of unexplained ascites.

### 1. DIFFERENTIAL DIAGNOSIS OF ABNORMAL LIVER FUNCTION STUDIES

Peritoneoscopy is probably most useful when focal liver disease is suspected, particularly where percutaneous biopsy has not produced a diagnosis. In experienced hands peritoneoscopy is quite safe and may be the safest way to perform a liver biopsy. Except for the fact that peritoneoscopy requires a great deal more preparation, time, personnel, and is more expensive it could be used routinely for liver biopsy.

### 2. DIRECT VISUAL LIVER BIOPSY

The principal advantage of peritoneoscopy is the ability to obtain a direct vision liver biopsy. This is particularly useful when focal disease of the liver is suspected such as metastatic or primary neoplasm of the liver, or when the area to be biopsied is in a relatively dangerous location such as the left lobe of the liver or in the region of the gallbladder bed.

Most clinicians greatly overestimate our ability to diagnose metastatic carcinoma of the liver. It is frequently stated that as many as 75% of percutaneous liver biopsies will be positive if metastatic disease is present. With far advanced disease of the liver this is probably true; however, more reasonable figures for the likelihood of demonstrating metastatic carcinoma can be obtained from the figures of Conn and Yessner[3] who did transthoracic and subcostal liver biopsies on autopsy material at the Westhaven VA Hospital. They found 106 patients with hepatic metastases at the time of death. Two percutaneous liver biopsies demonstrated metastatic carcinoma in 58% of cases. However, with only a single stick, 45% of lesions were demonstrated. This autopsy series has a built-in bias in that the degree of metastatic disease was considerably more extensive than the usual patient that clinicians are asked to evaluate. However, Conn broke this group down further into four grades based on the extent of hepatic neoplastic involvement after serially slicing the liver into one centimeter sections: Grade I with less than three metastatic nodules, Grade II with three to twenty-five nodules, Grade III with 25 to innumerable nodules, Grade IV with greater than 50% of the liver substance replaced by tumor. The incidence of positive biopsy was 21% in Grade I, 33% in Grade II, 65% in Grade III and almost 100% in Grade IV when two biopsies were performed.

In a more recent study, again on autopsy material, Dr. Grossman[4] found an overall positive rate of 54% using two transthoracic biopsies. These biopsies were done with a Menghini needle. If the material from the needle also was sent for cytology, and additional 15% positivity was found making an overall positive diagnosis of 69% of this autopsy material. Unfortunately, most clinicians do not have the degree of cytological expertise available to them as Dr. Grossman had from Memorial Hospital in New York.

Peritoneoscopy through its ability to directly visualize the liver would be expected to demonstrate between 85 and 95% of solid cell carcinomas. As many as 10% of metastatic carcinomas, however, do not involve the anterior surface of the liver and for that reason may not be seen although blind biopsy would be expected to pick up a few of these. Unfortunately, good studies comparing the efficacy of blind percutaneous biopsy and direct peritoneoscopic biopsy are not available.

### 3. STAGING OF LYMPHOMA

Peritoneoscopy has found an increasing use in the staging of lymphoma. The use of peritoneoscopy has been fostered primarily by the group at the NIH who routinely use it in place of staging laparotomy in Hodgkin's disease. When Hodgkin's disease presents it is unusual to have liver involvement. By percutaneous liver biopsy, the rate of finding liver disease is in the range of 5%. With the use of peritoneoscopy the yield is significantly higher, in the range of 15-20%. This latter figure compares favorably with the positive yield found in series where staging laparotomy was used. Unfortunately, in Hodgkin's disease liver function abnormalities are notoriously inaccurate in a prediction of true liver involvement. Positive liver function studies do not necessarily indicate liver involvement and vice versa. Many of the positive biopsies are found in patients with totally normal liver function.

There is a difference of opinion among those who treat Hodgkin's disease about the desirability of splenectomy prior to irradiation. Those who feel total nodal irradiation is the treatment of choice for all stages of lymphoma confined to lymph nodes need only know whether or not the liver is involved to make that determination. It would appear from the present data that this is as well assessed by peritoneoscopy as by staging laparotomy and offers considerably less morbidity. However, some feel that splenectomy is valuable in terms of reduction of the size of the field of radiation and increases tolerance to radiation and chemotherapy. Peritoneoscopy would be less useful in centers where this philosophy is held.

Another useful application is the evaluation of treated lymphoma where there is a question of relapse. Liver function and liver scan abnormalities are very common, particularly after radiation. In general these are due to the effects of radiation hepatitis but on occasion hepatic Hodgkin's disease is present and the patient needs to be transferred to chemotherapy.

In evaluation of non Hodgkin's lymphoma peritoneoscopy is not as useful and may miss a large number of positives.[5] It seems that the larger specimens obtained by wedge biopsies of the liver give greater opportunity to pick up minute lesions which may be scattered throughout the liver.

## 4. ABNORMAL LIVER SCAN

Clinicians are becoming increasingly disillusioned with the liver scan in the evaluation of liver disease. A few years ago we spent much of our time with peritoneoscopy chasing liver scan defects. We are less inclined to do this now and will usuallly perform peritoneoscopy only on particularly bothersome scan abnormalities or where focal liver disease is strongly suspected. Some scan abnormalities just cannot be ignored and will require direct vision biopsy particularly in an area which is poorly accessible to percutaneous biopsy.

## 5. EVALUATION OF HEPATOMA AND OTHER PRIMARY LIVER NEOPLASMS

Peritoneoscopy is useful in the evaluation and diagnosis of hepatoma. The treatment of hepatoma, particularly in this country, has been very discouraging for a number of reasons. Due to the relative infrequency of hepatoma in the United States our index of suspicion is low and there is often a long delay in diagnosis. Hepatoma, when it does occur, is often seen in the chronic alcoholic with severe end stage liver disease where, even with a diagnosis of hepatoma, treatment is not possible. However, with the advances made in the last few years in the field of liver surgery we should try to raise our index of suspicion, particularly since hepatoma as well as other primary liver neoplasms may occur in young nonalcoholic patients. A variety of liver tumors appear to be related to the use of birth control pills. With earlier diagnosis of hepatoma one would expect to have a higher cure rate since it is a relatively late metastasizing tumor. The evaluation of hepatoma at peritoneoscopy should include:

1. Determination of the extent of disease (Are both lobes of the liver involved?) and biopsies are taken from the uninvolved lobe as well as from the tumor.
2. Presence or absence of cirrhosis (If present, how severe is it and does it preclude resection?).
3. Biopsy under direct vision. It should be mentioned that hepatomas are very vascular tumors and a liver biopsy may be dangerous from the standpoint of excessive bleeding. A distinct advantage of peritoneoscopy is the ability to visualize the bleeding site and to determine immediately whether or not bleeding is likely to be excessive.

## 6. UNEXPLAINED PORTAL HYPERTENSION HEMORRHAGE

These patients often present with upper GI bleeds and during the evaluation of the hemorrhage, esophageal varices are found. There may or may not be a history of previous liver disease and a diagnosis of portal vein thrombosis is often postulated. I have seen several patients who have had totally normal liver function studies who, at peritoneoscopy, had extensive post necrotic cirrhosis. The routine liver biopsy in post necrotic cirrhosis is often normal or has minor nonspecific findings. Peritoneoscopy can readily make the diagnosis in this situation.

## 7. UNEXPLAINED ASCITES

Peritoneoscopy is extremely valuable in the evaluation of unexplained ascites. Particularly where a diagnosis of tuberculous ascites is suspected, peritoneoscopy can be invaluable. The typical "millet seed" lesions are readily visualized on the peritoneum and can be biopsied and the diagnosis proven. It should be remembered, however, that patients with unstable ascites such as an alcoholic liver disease may lose a considerable amount of fluid during and following peritoneoscopy. Therefore, we usually prefer to have patients in the hospital for at least a week before proceeding with peritoneoscopy. Other causes of ascites such as chronic passive congestion, metastatic carcinoma and the more usual cirrhosis of the liver are readily apparent by peritoneoscopic examination.

A number of complications may occur with peritoneoscopy but are very unusual in the hands of experienced examiners. Contraindications also exist. For a complete discussion of complications and contraindications the reader is referred to Dr. Boyce's excellent review of laparoscopy.[2]

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*Obstetrics and Gynecology*

# Relicensure and Recertification

## Part II

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In the specialty of Obstetrics and Gynecology, the decision was made by the American Board to offer a voluntary recertification program with the first cycle beginning in the summer of 1976. Each Diplomate of the Board was sent a questionnaire which was aimed at collecting demographic data and constructing a profile of practice activities for the individual. The opportunity for participation in the initial cycle was offered to all individuals who had been certified for the least six years who returned a correct and completed questionnaire, and who carried on a practice involving hospitalization of patients.

A total of 1692 Diplomates, or somewhat less than 20 percent of those eligible, entered this first recertification cycle. They received instructions for collecting data on their practice from the period July 1976 through June 1977. It was anticipated that group norms would be established for a number of practice activities, and those identified as deviating significantly from the norms in one or more categories might be asked for additional justification of their practice patterns. The Board distributed a "pre-test" in January of 1977 which was designed for completion at home, returned to the Board for scoring, and subsequent return to the individual physician with an indication of correct and incorrect answers. The final recertification exam of the first cycle is scheduled for December 3, 1977.

At the same time, the American College of Obstetricians and Gynecologists has worked to develop educational programs for all individuals in the specialty, but with some of these designed to be specifically utilized by the recertification candidate. *Precis, An Update in Obstetrics and Gynecology,* representing a compendium of areas in obstetrics and gynecology in which new information has been generated or the role of the obstetrician-gynecologist recently amplified or clarified, was published in January 1977. A series of postgraduate courses, offered both in conjunction with ACOG meetings and free-standing about the country, together with Update audio tapes provide an opportunity for the specialist to review his or her knowledge of new aspects of the discipline.

A small liaison group between the examining and certifying agency (the American Board) and the educational organization, (the American College) has reviewed questions from the pre-test and from the final certifying examination to be certain they are relevant to the day-to-day clinical practice of the specialty. The recertification procedure is voluntary, although it is still offered only to individuals who are in practice involving routine hospitalization of patients. A second cycle is now open to all Diplomates, regardless of the year of their initial certification. The recertification procedure is maturing.

**V. Case History — Internal Medicine.** A CPC is always useful in clinical medicine. In this context, the experience of the American Board of Internal Medicine which carried out its first recertification cycle in 1974 is of interest. Details were described in the Annals of Internal Medicine.[1] Approximately 3,300 internists of the 15,000 eligible applied to take this first examination; a slightly larger percentage than applied in obstetrics and gynecology. The examination was preceded by a published syllabus, a series of intensive review-type postgraduate courses given in a number of

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centers across the United States, and a pre-test—an approach very similar to that adopted in obstetrics and gynecology.

The final multiple choice examination was given in October 1974. The examination includes 274 scorable items with approximately two-thirds recurring from the previously provided self-assessment test and one-third from the files of the American Board of Internal Medicine. Two criteria were set forth for questions on the final exam. First, they had to be relevant to the practice of general internal medicine, and second, information contained in the question must be provided in the syllabus or be considered core information. The mean number of answers correct on the test was 79 percent; the number of correct answers necessary to give a passing score was 63 percent. Of all those taking the test, 95.4 percent passed.

Various classes and descriptions were examined to see what factors might relate to high test performance, and these were of particular interest: the individuals with the best scores on the test were under 40 years old, and those who had completed their residency training since 1964—essentially the same group of people. Excluding age (although several individuals over age 70 passed the examination), other factors had little influence on test scores. There was no significant difference in the pass rate based on length of residency, full-time private versus academic medical center practice, university hospital versus community hospital, or an urban practice location as compared to a rural area. Anecdotally, most physicians who participated in this first recertification cycle believed it had been a worthwhile educational experience.

**VI. Summary**. This brief discussion is neither in advocacy for nor in opposition to recertification, but rather a description of the state of the art. It is apparently true that the great majority of individuals involved in recertification consider it an educational experience which is worth their time and effort, provided the procedures do not become too cumbersome. I believe we can expect continued evolution.

It is also probably true that the move of all specialty boards to recertification procedures plus the specific continuing education requirements at the level of the state, licensing boards, the medical societies, and the specialty societies has averted a federally-mandated program. The clamor in Washington for a federally-controlled licensing examination and re-licensing every six years appears to have died down, and perhaps this is our greatest benefit. This once, medicine appears to have moved ahead of societal demand and made the changes itself, rather than having had the changes imposed by a governmental agency.

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*Oncology*

# Chemotherapy of Head and Neck Cancer

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## Introduction

Head and neck cancer is the fifth most common malignancy in the United States. The overall 5-year disease-free survival rate is 50% or less. These statistics are paradoxical considering the ease of diagnosis and accessibility for treatment of tumors in the head and neck region. It is also possible to identify the high-risk patient who has a history of heavy smoking and alcohol consumption.

Early carcinomas (Stage I-II) of the head and neck region are effectively treated with surgery or radiation therapy. Five-year disease-free survival rates for patients with Stage I or II carcinoma are in the range of 80%-90%. The more advanced carcinomas in the Stage III and IV category have cure rates of less than 50%, however, and it is in this latter group that a multimodality approach to treatment is necessary.

Whereas surgery and radiation therapy have well-established roles in the treatment of head and neck cancer, chemotherapy has long been viewed as a "last-ditch" effort reserved for the patient with terminal head and neck cancer. However, as new drugs have become available and more sophisticated methods of administration accepted, this view has been changing and chemotherapy is now being viewed as a helpful adjunctive treatment.

In this article we will briefly review the current status of chemotherapy for head and neck cancer and

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### Table 1
### INTRA-ARTERIAL CHEMOTHERAPY OF SQUAMOUS CELL CARCINOMAS OF THE HEAD AND NECK*

| Anticancer Drug | % Partial Remissions |
|---|---|
| 5-Fluorouracil | 75 |
| Mechlorethamine | 50 |
| Methotrexate | 44 |

*Adapted from Bertino et al [1]

### Table 2
### ANTICANCER DRUGS WITH ACTIVITY AGAINST SQUAMOUS CELL CARCINOMAS OF THE HEAD AND NECK*

| Anticancer Drug | % CR + PR |
|---|---|
| Methotrexate | 38 |
| 5-Fluorouracil | 15 |
| Hydroxyurea | 39 |
| Cyclophosphamide | 36 |
| Vinblastine | 29 |
| Bleomycin+ | 22 |

+Crooke, ST, and Bradner, WT. Bleomycin, a review. J Med. 7:333-428, 1976.

the role of this therapeutic approach in the overall management of these tumors.

**General Considerations for Chemotherapy**

There are a variety of possible chemotherapeutic approaches to the treatment of both early and advanced squamous cell head and neck malignancies. Several anticancer drugs have proven useful as single agents given intravenously or intraarterially in the management of these diseases. Unfortunately, effective cytoreductive chemotherapy may not translate into improved survival duration in the majority of patients who suffer from severe weight loss and malnutrition. Attention to the supportive care of head and neck cancer patients, including oral, peripheral, or central hyperalimentation, is essential if chemotherapy is to prove useful. There is evidence that hyperalimentation may decrease the toxicity of anticancer drugs, and it has been shown to accelerate wound healing, weight gain, and convalescence in patients who have undergone radical surgery or high-dose radiation therapy.

**Intra-Arterial Therapy**

High response rates of relatively short duration have been accomplished with intra-arterial therapy using methotrexate, 5-fluorouracil, and mechlorethamine (Table 1). The problems of catheter placement, infectious complications, and bleeding or embolization have decreased the popularity of this potentially useful approach to the control of localized tumor growth. Furthermore, advanced head and neck squamous cell cancers may be associated with distant metastases in as many as 20%-50% of all patients. Intra-arterial therapy, while an effective local therapeutic modality, is unlikely to control metastatic disease.

**Systemic Therapy**

Methotrexate continues to be the most commonly used agent for the treatment of head and neck tumors. Used as a weekly or twice-weekly treatment at 25-60 mg/M$^2$ of body surface area, it has given partial remission rates (greater than 50% decrease in tumor size) of approximately 50%[1]. Unfortunately, the median duration of these responses is in the range of 3-6 months. Levitt et al[2] have shown that high-dose methotrexate (i.e., 240-1080 mg/M$^2$) infusions followed by leucovorin(N$^5$-formyl-tetra-hydrofolate), which bypasses the methotrexate block of thymidylate biosynthesis, can produce remissions (55%) with little hematologic or gastrointestinal toxicity. Again, remissions have been of relatively short duration. Bleomycin, adriamycin, cis-platinum, the vinca alkaloids, and cyclophosphamide are other drugs that have been associated with relatively high rates of partial remission (Table 2).

A number of published studies report the results of combining any two to seven of the active anticancer drugs for the treatment of these squamous cell carcinomas. Price et al[3] have reported a particularly ambitious study combining vincristine, adriamycin, bleomycin, methotrexate, 5-fluorouracil, hydroxyurea, and 6-mercaptopurine (in that order), followed by leucovorin rescue. Nineteen of the 24 evaluable patients (i.e., those receiving three or more courses of therapy) had a 50% or greater reduction in tumor size. Although survival and disease-free survival data were not included in this study, the results were especially striking in that 19 of the patients had received some prior chemotherapy. There were only two episodes of severe leukopenia (i.e., white blood cell count less than 1000/mm$^3$) and there were no drug-related deaths.

We are currently evaluating a six-drug combination chemotherapy regimen for advanced head and neck squamous cell cancers at the University of Arizona Health Sciences Center. It includes a 4-day infusion of bleomycin during the first two monthly courses, together with vincristine, adriamycin, cis-platinum, cyclophosphamide, and 5-fluorouracil. It was specifically designed to define effective second-line chemotherapy for patients who have relapsed from or failed to respond to an initial trial of methotrexate. Preliminary results in this patient population are encouraging with an objective response rate of approximately 50%.

**Combined Modality Treatment**

With the development of more efficacious drug regimens for the treatment of advanced head and neck carcinomas, there is an increasing possibility of improving the disease-free survival of patients with lesions associated with a high risk of recurrence by combining such therapies with radiation therapy and/or surgery. Several randomized studies have compared the results obtained with either 5-fluoroura-

## Table 3
## SELECTED, PUBLISHED ADJUVANT CHEMOTHERAPY TRIALS FOR HEAD AND NECK CANCERS

| Therapy | Dosage Schedule | Results | Reference |
|---|---|---|---|
| Methotrexate vs control | 25 mg IV, Q3Dx5 prior to XRT* | No difference in survivals at 3 years | Lustig et al. *Cancer* 37:2703, 1976 |
| Methotrexate vs control | 50 mg IA +, QD to a total of 300 mg prior to XRT | No difference in survivals at 18 months | Richard, et al *Cancer* 34:491, 1974 |
| 5-Fluorouracil vs control | 10 mg/kg QDx3, then 5 mg/kgx3D/wk dur XRT* | Sig. improvement in med. survival for 5-FU‡ patients with tumors of oral cavity and tonsils | Ansfield et al *Cancer* 25:78, 1970 |
| 5-Fluorouracil vs control | 3-15 mg/kg IA + QD up to 27 D during XRT* | No difference in med sirvival at 5 years | Gollin, et al. *Cancer* 27:768, 1971 |

***XRT - Radiation therapy of curative intent**
**+IA - Intra-arterial**
**‡5-FU-5 fluorouracil**

cil or methotrexate given prior to or during radiation therapy to those obtained with radiation alone for advanced disease (Table 3). Ansfield et al (Table 3) showed that radiation plus 5-fluorouracil produced a significantly longer survival in patients with advanced tonsil and intra-oral cancer compared to those receiving only radiation therapy. Lustig et al (Table 3) were unable to prove intravenous methotrexate together with radiation therapy to be better than radiation alone for these poor prognosis tumors. However, the methotrexate was given for only five doses prior to the irradiation. Neither methotrexate nor 5-fluorouracil given by the intra-arterial route prior to or during radiation therapy, respectively, has been shown to improve survival over that observed with radiation alone (Table 3).

Several investigators have published preliminary reports of high-dose methotrexate with leucovorin rescue prior to surgical resection of tumor in patients with advanced, high-risk for relapse lesions.* Tarpley et al[4] reported that two courses of intravenous methotrexate at a dose of 240 $mg/M^2$ over 24 hours followed by "rescue" starting 2 weeks prior to radical surgery resulted in a statistically significant increase in the disease-free interval in the treated patients over that observed in matched controls. Unfortunately, their study did not result in an improvement in either total recurrence rate or survival for the methotrexate-treated patients. Recently, Pitman et al[5] used much higher doses of methotrexate (i.e., 3-7.5 $gm/M^2$ by rapid intravenous infusion) with leucovorin rescue and urinary alkalinization at weekly intervals for three to five doses prior to definitive surgery and/or radiation therapy in nine high-risk head and neck tumor patients. Seven of the nine patients had a 50% or greater decrease in the size of measurable tumor during chemotherapy. (Five had reductions greater than 75%.) There was no evidence of increased morbidity from radiation therapy or surgery as a result of the prior chemotherapy.

Whether such adjuvant methotrexate therapy will improve survival and disease-free survival durations remains to be proven with randomized, controlled studies.

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***Note: High-dose methotrexate with leucovorin rescue is potentially quite dangerous because of the possibility of severe myelosupression or renal shutdown. It should be employed only by physicians who are experienced in its use and able to monitor its pharmacokinetics.**

## *Ophthamology*

# Strabismus: A Practical Approach

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Editor
Robert Rubenzik, M.D.

The early diagnosis and management of strabismus are of vital importance, not only to prevent amblyopia and gain normal binocular vision, but also to diagnose underlying organic disease. Very occasionally an organic macular lesion such as congenital toxoplasmosis or even retinoblastoma may be the cause of ocular misalignment.

Ocular misalignment may be "phoric" or "tropic"; a **phoria** being one that is kept **latent** by cerebral fusion of the binocular input and a **tropia** one that is **manifest** and not kept latent by fusion of the binocular input. It is this latter that is so important to detect and treat early. The best diagnostic method is the "monocular cover-uncover test." With the patient fixating a small target of interest, the 20/40 Snellen letter or small toy at 20 feet, the cover is placed before one eye (slightly away from the face to allow the examiner to see the eye under cover) and both eyes are carefully observed for any shift of fixation. When the nonfixating, turned eye, of a patient with a true tropia is covered no shift of fixation of either eye will be observed. When the cover is then placed before the fixating eye however, the uncovered eye will then be seen to shift position to take up fixation. If the shift is temporally, this represents an esotropia; if the shift is nasally, this represents an exotropia. Concurrently the previously fixing covered eye will also be seen to move simultaneously and in the same right to left direction as the uncovered eye moves to take up fixation.

Unfortunately, not all patients cooperate and some are unable to fixate well enough for accurate cover testing. For this group, the Hirschberg corneal light reflex test is best. Simply by observing the relative positions of the corneal reflection of a small light held 1 meter directly in front of the eyes, one may diagnose a tropia and estimate its amount. For example, if the light centers in the pupil of the right eye and is seen fall at the temporal pupillary margin of the left ey this represents a left esotropia of 30 prism diopter Halfway between the pupil margin and limbus is prism diopters and at the limbus is 90 prism diopte of esotropia.

### CLASSIFICATION OF STRABISMUS

A. Congenital esotropia
  1. Pseudo strabismus
  2. True congenital esotropia
B. Acquired esotropia
  1. Infantile
  2. Non-accommodative
  3. Partially accommodative
  4. Pure accommodative
C. Exotropia
  1. Pseudo exotropia
  2. Congenital exotropia
  3. Intermittent exotropia

A. Congenital Esotropia

1. Pseudo congenital esotropia: prominent epicar thal folds coupled with a flat nasal bridge, frequentl give the appearance of an esotropia, but the cover tes or Hirschberg test will rule this out. As the chil grows, the anterior growth of the nasal bridge will pul the folds medially lessening the appearance o esotropia.

2. True congenital esotropia: this type has an earl onset prior to 6 months of age, and is large, being 5 prism diopters and more of turn. It resembles bilateral sixth cranial nerve palsy, but good latera rectus function can be demonstrated by inducin vestibular nystagmus by rotating the child hel upright and observing the abduction of each eye These children almost never develop amblyopi because they cross-fixate, observing objects in the left visual field with the right eye and objects in the right visual field with the left eye, thus alternately stimulating each eye. Accordingly, they almost never require patching.

The definitive treatment is early surgery at 6 to 8 months of age. With early treatment, the majority will achieve fusion and a small residual angle from 0-10 prism diopters of esotropia. To date no patient with true congenital esotropia has achieved central fusion,

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but the earlier the treatment, the higher the degree of peripheral fusion will be obtained and the more stable the post operative alignment.

B. Acquired Esotropia

1. Infantile: this strabismus, like congenital esotropia, onsets before one year of age, but has none of the characteristics of congenital esotropia. It is associated with organic defects such as cataracts and retinal esions and is rare.

2. Non-accommodative: the majority of these onset from 18 months to 4 years of age. The deviation from 20-40 prism diopters is smaller than congenital esotropia and unlike the latter, patients with acquired esotropia do not cross-fixate. Rather they prefer to fix with one eye and the fellow (turned) eye develops amblyopia.

Because of this suppression, not only will these patients fail to develop good visual acuity, but they will also be unable to develop binocular vision.

Initial treatment is aimed at elimination of the suppression and stimulation of the development of good visual acuity by constant skin patch occlusion of the straight eye. Once the visual acuity is equal in the two eyes or at a stable maximum level in the amblyopic eye, the next step is surgical re-alignment of the eyes to allow the development of binocular vision. With early treatment and aggressive management of the amblyopia approximately 75% of patients with acquired esotropia will develop a 100% functional cure with normal central fusion and good vision in each eye.

3. Partially accommodative: this group is exactly the same as the non-accommodative type, but is associated with high hyperopia, correction of which by glasses partially but not completely straightens the eyes. Surgery is necessary to eliminate the residual deviation.

4. Pure accommodative: these patients also have high hyperopia, but spectacle correction completely straightens the eyes. A fair number of these patients even with glasses on will still turn in at near when reading and this is eliminated with additional "plus" spectacle power for near in the form of bifocals. Surgery is not required for these patients. Generally, the bifocals and eventually the glasses can be eliminated as they reach visual maturity from 8-10 years of age.

An important point to note in examining all of these patients is to use an accommodative target because if only a fixation light is used, accommodation won't be stimulated and the strabismus may not be manifest.

C. Exotropia

1. Pseudo exotropia: retrolental fibroplasia, the oxygen induces retinopathy of prematurity may have caused temporal dragging of the macula with an apparent exo-deviation. This is a pseudo exotropia however, because on cover testing these patients actually test as esophotia.

2. Congenital exotropia: this form of strabismus is exceedingly rare.

3. Intermittent exotropia: this is the commonest type of exotropia with onset from 18 months to 2 years. It is often apparent only when the child is gazing off in the distance and not at near. One must therefore examine the children looking out the window at a far distant object. Characteristically these children close one eye in sunlight and this is an important diagnostic point to ask for in the history. Because the deviation is intermittent, these patients won't develop amblyopia, but their binocular control is poor and unless treated they develop an increasingly frequent exotropia. The definitive treatment is surgical. The best functional results are achieved with planned surgical overcorrection at 2 years of age. With this management, 75-80% of the patients will achieve a complete functional cure with central fusion and stable binocular control.

Strabismus may be on a vertical plane due to dissociated vertical divergence, Brown's superior oblique tendon sheath syndrome, superior oblique palsy with a head tilt this being the commonest type, blow out fracture of the orbital floor, double elevator palsies, or dysthyroid ocular myopathy. These are less common however, and beyond the scope of this paper.

In summary, strabismus is a surgical condition. Early diagnosis and treatment are mandatory to eliminate potentially lethal organic disease, and iatrogenic legal blindness and lack of binocular vision from delay in management. Children do not outgrow strabismus.

*Radiology*

# Localization of Cactus, Glass and Other Foreign Bodies in Soft Tissues

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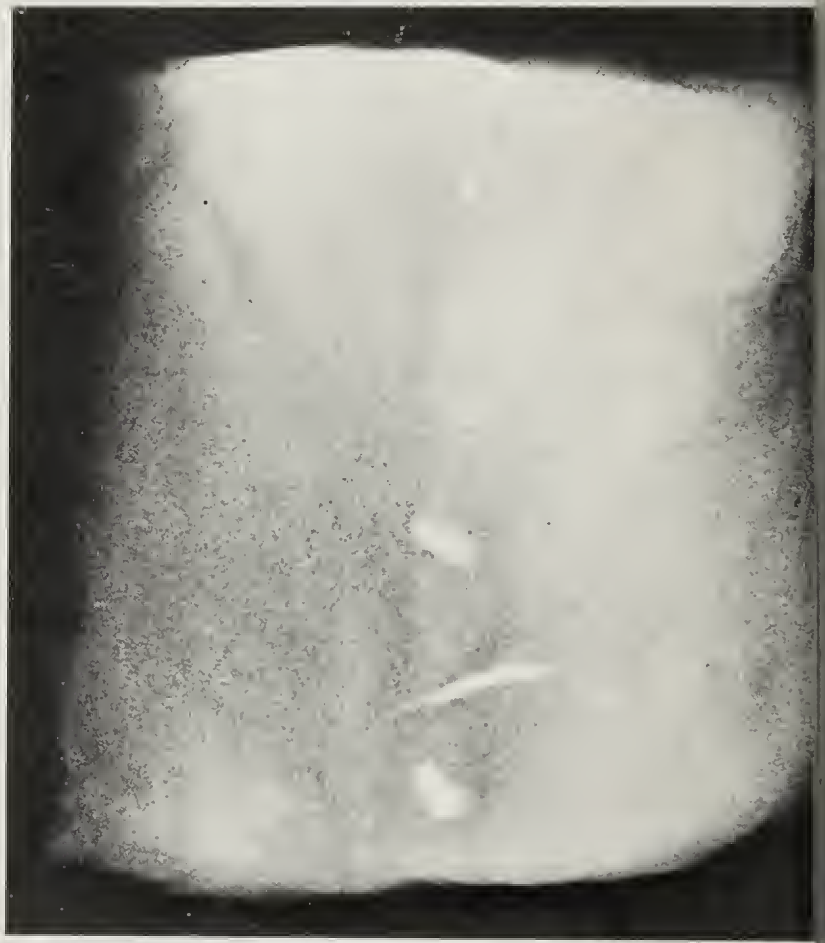

Figure 1
Fragments of multiple types of glass are easily identified on routine soft tissue radiograph through a solid beef roast measureing 10 centimeters in diameter.

**Introduction:** Although there are numerous articles in the medical literature demonstrating the facility with which many foreign bodies may be identified within the soft tissues, many physicians remain skeptical. The opinion is commonly voiced that only leaded glass can be demonstrated by radiographic technique, and that non-metallic foreign bodies may only rarely, if ever, be seen. This widely held belief is clearly not the case, and failure to utilize radiologic techniques for localization of foreign bodies is a severe oversight.

**Materials and Methods:** A solid beef roast, roughly cylindrical in configuration, measuring 10 cm in diameter and approximately 10 cm in length was used as a phantom. The normal soft tissue planes of the roast were maintained for purposes of this experiment. For glass localization, both leaded and non-leaded glass were employed including fragments of (1) a beer bottle, (2) electric insulation glass, (3) a liquor bottle, (4) an electric light bulb, (5) a microscope slide cover slip, and (6) a glass microscope slide.

These materials were imbedded into the substance of the roast so that no portion of any of the glass fragments protruded from the margin of the phantom. Radiographs were then obtained.

For the localization of cactus spines and other less opaque foreign bodies, spines, thorns or splinters of the following types were used: (1) saguaro cactus, (2) barrel cactus, (3) hedgehog cactus, (4) prickly pear cactus, (5) "teddy bear" cholla cactus, (6) devil's claw, (7) aloe succulent, (8) "jumping" cholla cactus, (9) maple, (10) pine, (11) pyrocantha and (12) steel wire for comparison. A comparable phantom was used for this portion of the study. Soft tissue technique radiographs were then obtained immediately and after a 24 hour delay. Also, after 24 hours, a xeroradiograph was produced.

**Results:** All six types of glass used in this study, including non-leaded types visualized easily in all projections. Figure 1 illustrates the ease with which the glass foreign bodies were seen.

The cactus spines and other foreign bodies were more difficult to identify by routine radiographic technique. On the initial radiographs, (Figure 2) some of the spines and thorns are seen because of the

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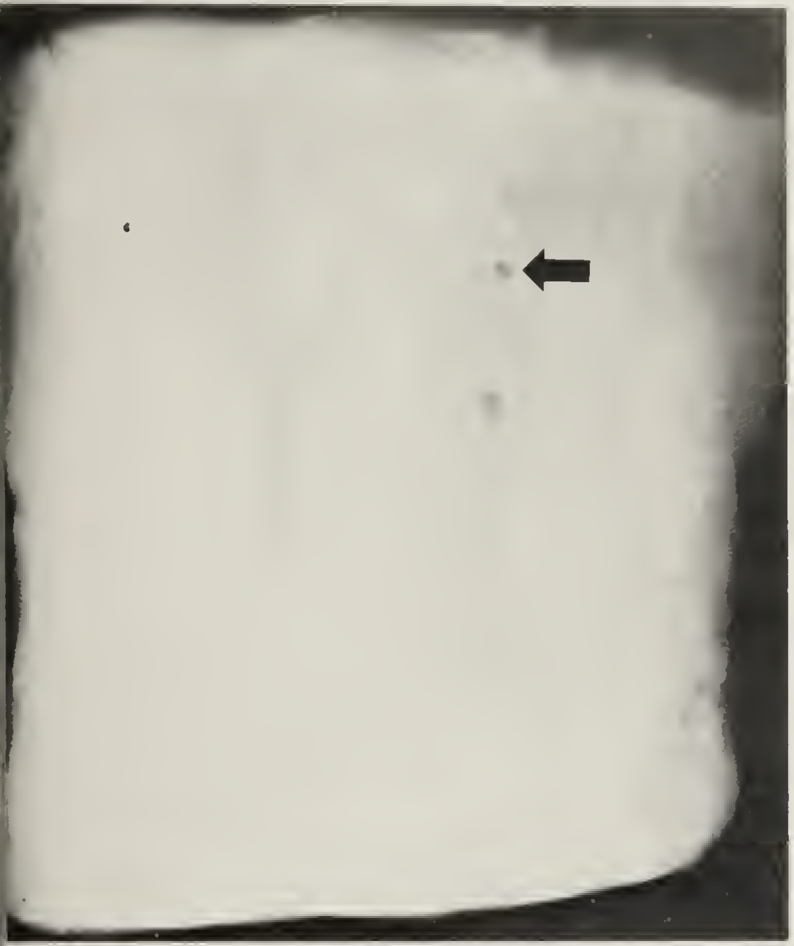

Figure 2A

ntero-posterior view of phantom. The only discernible images are hose of the metal wire, and the gas shadows within the dried-out, as-containing thorns. The large arrow demonstrates the gas hadow of one such thorn.

Figure 2B

Lateral view obtained at the same time as figure A. Only the metal wire is evident on this view. The thorns, including those containing gas, are not seen except on the AP (axial) view. (A total of 18 thorns are present in this specimen).

companying gas introduced with the foreign body. his is gas against soft tissue contrast. Even these as shadows were difficult to identify, and were seen hen on end on the A-P projections, and were not en at all on the lateral views in profile.

On the 24 hour radiographs, the foreign bodies were en with even more difficulty, as the amount of gas ad diminished within the spines and thorns. owever, the 24 hour xeroradiograph demonstrated ost of the foreign bodies, including many which had ot been seen at all on the routine radiographs.

**Discussion:** Glass should be routinely identifiable if nbedded in the soft tissues. With appropriate views f an anatomic region suspected of harboring a glass reign body, the identification should be made in ost instances. This finding concurs with the onclusions of several other authors who have done imilar experiments [1,2,3,4,5,6] However, not all f the previous studies were performed using flesh, pting instead to use water or wax phantoms. Voesner and Sanders [7] did use a lamb shank for heir study and clearly demonstrated that many types f foreign bodies were demonstrable by routine soft tissue radiographic technique. Xeroradiography may further enhance the visualization of glass foreign material. Non-visualization of glass **suggests** its absence, but is not conclusive proof.

When non-metallic and non-glass foreign bodies are suspected within the soft tissues, routine radiographic technique **may be** helpful if performed immediately after the injury, since the adjacent inflammatory reaction might cause rapid resorption of the accompanying gas. This phenomenon is suggested by the diminution in gas around the foreign bodies implanted in the beef roast, even without the effects of an inflammatory response. However, even after 24 hours, xeroradiography was extremely helpful in localizing foreign bodies, many of which could not be identified at all on the preliminary, routine radiographic technique. We conclude that xeroradiography should be performed when localization of a non-metal and non-glass foreign body must be accomplished.

Of special interest in this study was the ability to identify and localize most of the cactus spines and splinters by xeroradiography, which contrasts the conclusion of Woesner and Sanders [7] who stated

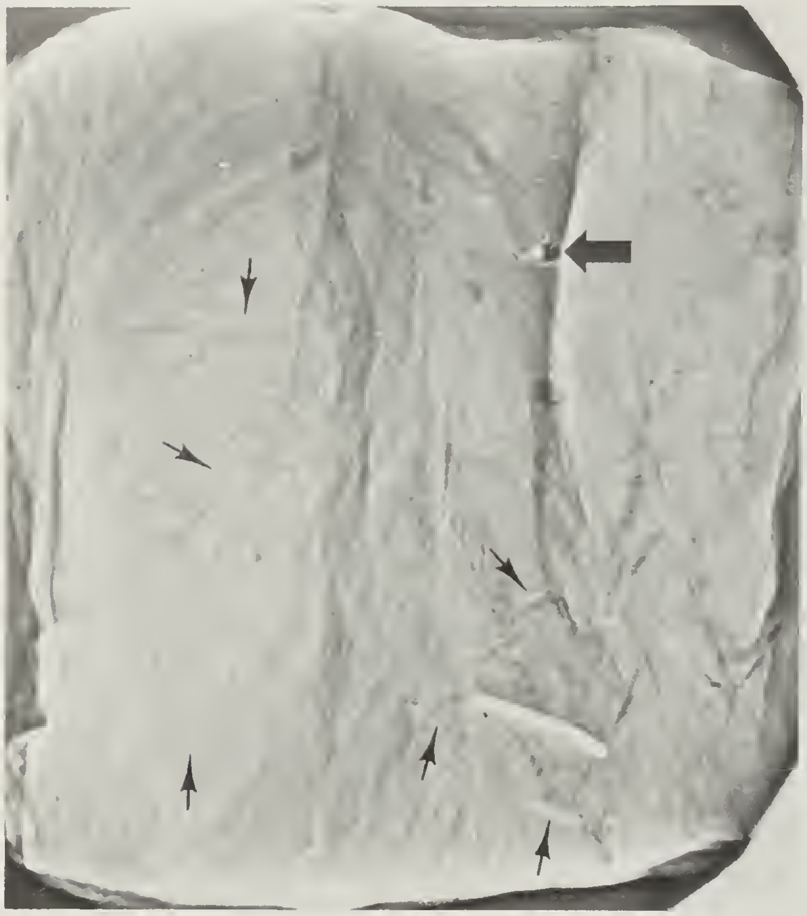

Figure 3
**Antero-posterior soft tissue xeroradiograph of the phantom demonstrates dried, gas-containing thorns, as well as fresher, gasless thorns. The small arrows indicate gasless foreigh bodies, (i.e. fresh cactus spines). The large arrow again demonstrates a gas-filled thorn, as was seen in Figure A.**

that they were unable to detect a palm thorn by either routine technique or by xeroradiography. In this portion of the Southwest, cactus thorn penetrating injuries are common, and xeroradiography should be employed more frequently in an attempt to localize these objects.

**Conclusion:** Contrary to the beliefs of many physicians, glass foreign bodies within the soft tissues are readily identifiable utilizing routine radiographic technique or xeroradiography. In addition, many non-metallic and non-glass foreign bodies, ie. cactus spines, can be identified in many instances utilizing xeroradiography.

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*Surgery*

# Electrical Burns

Craig Wilkinson, M.D.

The first recorded man-made electric shcok occurred in 1746, when two Dutch physicists accidentally discharged a Leyden Jar through themselves, and the first mortality occurred shortly after the development of the Dynamo in 1879, when a stagehand was killed in Lyon, France. Through the widespread use of electricity in the United States there are an estimated 1,000 deaths per year attributable to electrical accidents, and many more less than fatal injuries. In the past, electrical accidents were viewed with awe and were surrounded by an aura of mystery because they occurred rapidly, often with an electrical arc, and a flash of light and smoke. The victim had tetanic muscle contractions, convulsions, was rendered unconscious, and his clothes often burst into flame.

Understanding electrical injuries today begins with reviewing the factors that determine their severity. The three main factors are: (1) type of current, (2) value of current, and (3) duration of contact with current. Alternating current is more dangerous than direct current because of its propensity to cause tetanic muscular contractions, including ventricular fibrillation, but at higher voltages direct current becomes just as dangerous. The value of current is measured in amperes or milliamperes, which are directly proportianal to voltage and inversely proportional to resistance. It takes approximately 1 to 2 milliamperes of current for a tingling sensation to be felt in the skin. About 15 to 20 mas is defined as the "let go current," or that current at which when grasped, the victim cannot let go. Approximately 90 mas directed through the respiratory center of the central nervous system can cause respiratory depression or arrest, and 100 mas traversing the heart can cause it to fibrillate. The duration of contact with current is also directly related to the amount of injury.

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The longer the contact, the more severe the damage will become.

The skin is the body's protector from electrical njury because the resistance of dry skin is in the range of 1 million ohms. However, sweat on the skin reduces its resistance to 35,000 ohms, and skin that is thoroughly immersed in water has a resistance of only 1000 ohms. For this reason household current is not fatal if touched with dry hands. However, skin resistance is reduced by blister formation, and at approximately 50 volts, skin blisters form in 6 to 7 seconds from the heat. Most authorities feel that less than or equal to 24 volts can be considered "safe" under most conditions.

Passage of current through the body causes damage by the heat formed as current passes through the resistance of the various tissues. The greater the resistance, the greater the heat generated. The second mechanism of tissue damage is the direct effect of electricity, thought to be a type of ionization phenomena. Clinically it has been shown that passage of current causes damage to tissues much more severe than a burn from heat at the same amperage. Deep electrical injury resembles crush injury more than it does a simple burn.

The various tissues of the body react differently to the transmission of electrical current. If the voltage is high enough to penetrate the highly resistant skin, a great amount of heat is generated, explaining why the characteristic entrance and exit wound of the skin are full-thickness injuries extending into the deeper tissue levels. The skin in these areas appears leathery, whitish-yellow, and charred in the center. Damage to blood vessels depends on the vessel size, larger vessels usually remaining patent, smaller vessels becoming completely thrombosed. Vessel walls are damaged and surface thrombi form, explaining the phenomena of delayed hemorrhage due to rupture. Because of this interrupted blood supply, muscle necrosis and injury are sometimes delayed and found in areas distant from the path of current. Grossly, the appearance of necrotic muscle varies from the pale appearing muscle that has been heat coagulated, to the dark purple devascularized muscle usually found next to the deep blood vessels and nerves. Clinically, damage to nerves can present as a partial, temporary, or complete motor and/or sensory loss. These clinical changes are secondary to primary thermal necrosis of nerves, perineural scarring, or damage to nutrient vessels. If voltage is high enough to traverse the resistance of the tendons, they can actually be coagulated or melted. Bones are usually spared because of their relatively high resistance. Current follows the path of least resistance in the body. The order of decreasing resistance of tissues is: bone (most resistant), fat, tendon, skin, muscle, nerves, and blood vessels (least resistant). This is why much of the damage in electrical injuries is found deep in the tissues near the major vessels and nerves.

Morbidity of electrical accidents is due to two other mechanisms besides the actual passage of current. When electrical current passes through the high resistance of air, extreme heat is generated. This arc, as it is called, is visible as white light, and the temperature can be as hot as 2500 to 3000 degrees celsius. It is easy to see how skin near an electrical arc can sustain a deep thermal burn. Sparks from an arc can ignite clothing or materials on or near a victim, causing ordinary flame-type burns. Characteristically, a patient involved in an electrical accident will receive electrical thermal burns from electrical arcs, flame burns, and damage due to current passing through his tissues.

A typical injury can now be described. A construction worker accidentally grasped a high-voltage line while working on the job. He sustained explosive burns of his hands and feet due to the heat of the arcs of entrance and exit. At the wrist, elbow, and axilla the superficial tissues and skin were again burned, explained by the fact that the vessels and nerves which carry most of the current are superficial in these areas, and the heat is brought near the surface, burning the skin. In the trunk and abdomen the large areas of low resistance usually result in insufficient heat formation to do permanent damage. At the groin or ankle there were extensive thermal injuries, and the exit wounds, usually in the feet, were severe and full-thickness in nature. In addition the extremities of our hypothetical victim may have sustained varying degrees of damage to the nerves, tendons, muscles, and blood vessels. His limbs might have shown ischemic changes of varying degree, motor and/or sensory losses, and severe edema, depending upon the amount of damage.

There are several associated injuries often seen in electrical accidents. Renal failure is quite common, and is found more often than in simple thermal burns. This is due to the initial severe shock, direct electrical injury to the kidney or renal vessels, and to toxic tissue breakdown products. The most frequent cause is toxic breakdown products released by damaged muscle, and it may be difficult to obtain a good urine output until the devitalized tissue has been excised. The treatment of renal failure in the electrically injured patent is hemodialysis. Although intra-abdominal injury is rare, it can occur, and usually consists of mural necrosis of viscera such as the gall bladder or intestine. Permanent brain damage is rare, even though the patient sustains severe electrical burns or injury about the face. However, cataracts of the eyes may develop, either in the early post-injury period, or even six to eight months after the accident. It should be remembered that patients may also sustain simple traumatic injuries from being knocked down, falling off a roof, etc., especially if rendered unconscious.

## TREATMENT

The treatment of electrical injury consists of first removing the victim from the source of electrical activity, either by turning off the current or moving him bodily with a non-conductor, such as a wooden stick. Since ventricular fibrillation and respiratory arrest are the immediate cause of death, cardiopulmonary resuscitation should be initiated for pulseless or non-breathing patient, and if available, electrical defibrillation should be used. Once the patient has been transferred to a facility for care, a first concern is fluid resuscitation. Fluid replacement volumes should not be estimated simply by surface area burned if current has passed through the body, but the patient should be appropriately treated as a crush injury.

Wound management is dependent on the type of injury, thermal burns of the skin being treated in the routine manner. Limbs with extensive edema may need fasciotomy to relieve swelling in deeper tissues compromising the vascular supply. Escharotomy may also be indicated if a circumferential burn eschar of the skin is constricting the circulation. If there is evidence of deeper injury, the electrical burn must be approached much more aggressively, because unless the hidden extensive necrosis of the deeper tissue is removed, infection (hematogenous or air borne) will inevitably occur. Severe edema, ischemic changes in a limb, sensory or motor loss in a limb, full-thickness skin injury along the path of current with no history of flame burns in the same area, persistent flexion deformity, and crepitance under the skin are evidence that deep injury has occurred, and early exploration and debridement should be considered. It is often difficult to differentiate damaged or devascularized muscle from viable muscle because devascularized muscle often turns red when the hemoglobin in it is exposed to the oxygen in the air during operation. Frozen section of muscle obtained during debridement is a recently described means of determining viability All dead tissue including blood vessels, nerves, muscles, tendons, etc., must be removed. Repeat debridement is often necessary three to four days later. If there is no viable tissue in an extremity at the time of operation for debridement, or if the tissue is infected to such a degree as to pose a threat to life, amputation is indicated. Angiography has not been shown to be helpful in limiting the extent of operation or delineating the level of necessary amputation. After the last debridement, it is still wise to observe the wounds for three to four days before reconstruction begins. This gives the physician one more chance to make sure he has adequately debrided all dead tissue.

The proper treatment of the electrically injured patient thus includes physiological resuscitation as well as surgical reconstruction. Judgement in management can only be gained through experience. For this reason it is recommended that all patients with severe electrical injuries be referred to the nearest burn treatment center.

# Advances in Nutritional Evaluation and Therapy of the Hospitalized Patient

Robert B. Gilsdorf, M.D., Ph.D.
Mervyn Willard, M.D.

Malnutrition in hospitalized patients approaches an incidence of nearly 50%.[1,2] Awareness of this problem is the result of the development of the nutritiona assessment method introduced by Jelliffe and now updated and made clinically applicable by Blackburn and his co-workers.[3,4,5]

It has become apparent that just weight loss is not a satisfactory indicator of malnutrition. Malnutrition should be subdivided into protein-calorie deficiency or the marasmic state and into just protein deficiency or the Kwashiorkor state.[3] Protein-calorie deficiency exists in the cachectic, wasted individual we usually think of as malnourished. The new methods of nutritional evaluation indicate protein malnutrition can exist alone. In this condition the body weight may stay up but visceral protein is decreased. Edema is frequently associated with this to account for the weight staying the same. Cell function is depressed, be it transport, secretory, or motor function, and, most pertinent in disease management, cellular immunity is diminished.[1,6] Visceral protein deficits are best assayed by decreases in serum albumin, total iron binding capacity or transferrin.[3] Decreased immunity can be shown by negative or delayed skin reactions to common antigens such as PPD, mumps, or candida. A more easily obtained indicator that serves the same purpose is the estimation of the lymphocyte count calculated from the standard white count. A lymphocyte count of less than 1,000 per cubic millimeter indicates immunity depression in the severe range.

The combined protein-calorie deficit is reflected of course by decreased anthropometric measurements, i.e., weight, mid upper arm circumference and skin fold thickness. From these measurements, are muscle circumference can be calculated. Comparing muscle circumference is the best method for estimating the percentage of muscle mass loss. The laboratory assessment of the degree of protein-caloric deficit should be based on the creatinine-height index.[1,4] To

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calculate this, one measures the creatinine excreted in 24 hours and compares it to normal values according to the patient's height. Tables of normals have been published by Bistrian, et al and from these the percentage of normal or the index can be calculated[3,4] The creatinine-height index is probably the best indicator of total body cell mass.

Generally a level of 60% of normal values for any of the new parameters mentioned above constitutes severe malnutrition. In addition to decreased wound healing associated with protein or protein-calorie malnourishment, patients with this have decreased respiratory exchange, slower bowel activity, and decreased nutrient transport.[7,8] There is an increased incidence of stress ulcers, decubitus ulcers, and a significantly decreased tolerance for infection. [1,2,8] They have a decreased tolerance and hence a diminished response to chemotherapy for cancer.[6,9] All of these deficits can be changed by vigorous nutritional support even with the additional caloric demands of the primary disease.

The isotonic glucose, (600 to 1,000 calorie per day) nutritional support patients commonly receive in the hospital can create a nutritional deficit even if it does not exist on admission.[2] Three thousand to 5,000 calories can be delivered per day by parenteral nutrition with hypertonic glucose and amino acid administration.[10] This form of therapy has now been available for ten years since the development of the technique for central venous catheter placement allowed its clinical application. Currently this therapy has reached a level of sophistication that establishes it as the standard in pharmacological nutritional support. Commercial preparations of 50% glucose and 8 to 9% amino acids are generally mixed one-to-one to produce a 25% glucose and 4 to 5% amino acid solution. With appropriate electrolyte additives in each bottle and weekly administration of a bottle of Intralipid, plus a monthly bottle of plasma, these preparations can produce a totally supporting solution containing one calorie per millieter. A slow advance to the optimal concentration, three times a week observation of glucose, phosphorus, BUN and electrolytes, and an awareness of early clinical signs of abnormalities such as mental state change, parasthesias and sudden weight increases allow one to detect and prevent most of the problems formerly encountered with this form of therapy.

Support of patients with protein sparing isotonic amino acid solutions administered through peripheral veins has been proven effective in decreasing muscle mass loss but has not permitted a satisfactory calorie load to build up the malnourished patient.[11,12] Intralipid, the isotonic fat emulsion solution, recently made available in the United States after being developed in Europe and Canada, can be combined with 3% amino acids to furnish adequate calories for a positive nitrogen balance.[13] The major technical problem with this form of therapy persists in being able to maintain a continuous peripheral venous access route.

The use of elemental or nutritionally complete predigested diets administered into the gastrointestinal tract, pioneered by Stevens, et al, eliminates many of the potential problems of total parenteral nutrition.[14] One must, however, have a functioning gastrointestinal tract to use it. About 30 inches of small bowel, either jejunal or ileum, is necessary for full nutritional maintenance. Absorption of adequate calories, proteins and fluids can be adequate in this length of bowel if motility can be controlled.[8] Drinking of these diets is not proven to be too effective because of the increased motility induced by the swallowed bolus and by flavor difficulties. Page, et al, Kaminski, and Dobbie, et al have described methods of passing small tubes into the stomach or small bowel either intraoperatively or by nasogastric route for constant drip administration of these diets.[7,15,16] These small tubes are comfortable and the constant drip does not stimulate motor activity. Proprietary preparations of these diets vary in degree of hydrolysis of the protein, in lactose content, and somewhat in electrolytes but individual patient tolerance is variable. If one does not work, another might. Even more important than with parenteral solutions, a slow advance of these diets is necessary.[16] Once tolerance is developed, this form of therapy can furnish total high calorie and high protein nutritional support. One the horizon for clinical use is the possibility of increased protein transport by addition of di- and tripeptides to these diets since they have been shown to be transported in a different carrier system than amino acids.[17]

The efficacy and need of nutritional support has been proven but in this age of technical advances, cost accounting of all therapy is essential. In our hospital, each bottle of total parenteral nutrition costs $49.50 so for three bottles per day, the weekly medications on our protocol, plus the minimal laboratory data necessary for monitoring the patient, the cost for total parenteral nutrition is approximately $1,365.00 per week. This becomes a consideration when enteric elemental diets cost approximately $18.00 per day and laboratory monitoring is much less necessary so a week of therapy at our hospital costs $213.00. Since it takes approximately three weeks to bring a person from severe depletion to a normal range, the cost considerations become even greater.[3]

Despite the cost, nutritional therapy has been proven to be essential in the optimal management of patients whether they are surgical or medical. The shortening of hospital days and the prevention of complications, to say nothing of the lives saved, warrant increased consideration of this therapy. New means of nutritional state assessment, patient selection, and selection of appropriate nutritional therapy are now technically relatively simple and should be learned and applied by all physicians.

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***Special Article***

# MEDICINE IN MEXICO IV. —

## Infectious and Communicable Disease

Charles C. Daschbach
James B. Seder

Despite considerable progress in the last decade, communicable disease remains a formidable public health problem in Mexico. The Public Health Secretariat (SSA) has recently promulgated a National Health Plan which will guide all government health programs through 1983. The plan gives a high priority to preventable communicable disease, targeting the 10 million persons under 5 years of age. During a recent active phase of the innoculation campaign (Fall 1975), over one million children in Mexico City received their first dose of polio and D.P.T. vaccinations in only six days.

Respiratory tuberculosis leads communicable disease mortality in Mexico today. Approximately 120,000 persons over 15 years of age are believed to carry active tuberculosis and only fifty percent of these cases are registered. Government estimates average 36,000 new cases of tuberculosis each year, with pulmon-

**Table 1. Communicable and Infectious Disease Registrations in Mexico, 1973-1974** [1]

| Disease | 1973 Cases | 1973 Deaths | 1974 Cases | 1974 Vaccinations [2] |
|---|---|---|---|---|
| Tuberculosis | 13,948 | 8,873 | 11,609 | 1,273,333 |
| Diptheria | 119 | 109 | 64 | 14,476,041 |
| Whooping Cough | 17,212 | 3,584 | 8,273 | 4,103,845 |
| Measles | 17,967 | 2,609 | 2,042 | 3,576,085 |
| Polio (acute) | 221 | 150 | 231 [3] | 10,214,602 |
| Tetanus | | | 1,737 | 16,176,341 |
| Mumps | 9,876 | 36 | 12,796 | |
| Chickenpox | 12,758 | 77 | 11,055 | |
| Infectious Hepatitis | 5,046 | 554 | 3,863 | |
| Viral Encephalitis | 37 | 140 | 54 | |
| Scarlet Fever and Strep Throat | 1,482 | 50 | 2,584 | |
| Erysipelas | 777 | 157 | 847 | |
| Influenza | 93,242 | 7,164 | 141,605 | |
| Syphilis | 9,774 | | 8,949 | |
| Congenital Syphilis | 98 | | 117 | |
| Early Syphilis | 3,463 | | 3,501 | |
| Gonococcal Infection | 16,066 | | 17,438 | |

1. data from World Health Statistics Annual Report, United Nations, 1976.
2. first vaccinations only.
3. 556 cases were reported in 1975.

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ary tuberculosis accounting for almost ninety percent of all cases. The pattern usually shows a high level of early exposure. Government surveys using the PPD tuberculin test indicates a 15.3% level of exposure in the 0-14 age group. As in all countries, tuberculosis mortality is gradually declining in Mexico and it currently accounts for 1.8% of all Mexican deaths. It is endemic in the North, Central, and Gulf regions with the highest annual mortality rate (40 per 100,000 persons) in the Central state of San Luis Potosi.

Measles has been a major scourge of all Latin American children and mortality rates remain excessively high. Malnourishment contributes heavily to this mortality, predisposing the children to serious complications. In Mexico, 59,164 cases and 11,504 deaths were recorded in 1972. A monumental vaccination program which began that year reduced the incidence to 17,967 cases and 2,609 deaths in 1973 and only 2,042 cases in 1974.

Recent public health concerns in Mexico have focused on outbreaks of poliomyelitis in the States of Sinaloa (Dec. 74-May 75) and Tabasco (Jan.-Aug 74). Its highest incidence is usually in the northern border states and metropolitan areas. However, an increase of 200% of polio cases in the Inland states was reported in 1976 with 47 cases in a one week period. In 1975 there were 556 registered cases with 87% of these cases reported in children under three years of age, and the traditional peak occurring during the epidemic diarrhea season (July-Sept.).

Among the zoonoses, Venezuelan equine encephalitis with epidemics in 1970, 1971 and 1972 (93 deaths in 1972), brucellosis (38 deaths in 1973), and rabies (46 deaths in 1973) are predominant. While in North America rabies is most common in the sylvatic or rural habitat affecting primarily wild animals, urban cats and dogs are the principal source or reservoir of human infection in Mexico and Latin America. Over 30% of the million-plus dogs in Mexico City are "street dogs" and a continuous vaccination program has a considerable task. In Ciudad Juarez after a lapse of 4 years without a case, 193 cases of rabies were reported in the 20 month period of October 1973-June 1975.

The priority of communicable disease prevention in Mexico's National Health Plan has already had an impact upon communicable morbidity and mortality statistics. Table 1 shows these statistics for some of the communicable diseases specifically targeted by national programs. The 1983 health goals of the Public Health Secretariat will be difficult, but not impossible, to achieve. The effectiveness of the measles vaccination campaign stands as an example, a milestone of planning, of cooperation, and of results.

*U. of A.*
*Grand Rounds*

## Anemia In Chronic Renal Failure: An Update

Irvin M. Cohen, M.D.

Though all patients with chronic renal failure are anemic, they seem to adapt to the anemia quite well. Very few complain of symptoms attributable to anemia, and therefore, very few require transfusion. The mean hematocrit of the more than 100 patients currently being dialyzed in Tucson is 25. Of course, this figure is skewed by those with polycystic kidney disease, who constitute about 10% of the dialysis population and maintain higher hematocrits, usually above 30. Transfusions are rare and are given almost exclusively to compensate for acute blood loss. Adequate dialysis, efficient blood return, minimization of blood drawing and blood loss, dietary supplementation of vitamins and minerals, and occasional use of parentral iron and androgens allow these patients to maintain tolerable levels of anemia and avoid the drawbacks of repeated transfusions.

The anemia is usually normochromic and normocytic with a low reticulocyte count. Burr cells may be seen in uremic undialyzed patients. The bone marrow is normocellular or occasionally hypocellular implying a lack of stimulation not an inability to make red cells. In a complex clinical setting such as chronic renal failure, the presumed causes of the anemia are multiple.

### CAUSES

ERYTHROPOIETIN — One of the primary reasons for anemia is decreased erythropoietin (Ep) production. The intact hormone is manufactured primarily in the kidney and is low or absent [2] when measured in renal failure with the bioassay.

However, the remaining renal tissue is known to continue to produce Ep because bilateral nephrectomy results in a decline in hematocrit.[2] The stimulus to Ep production is decreased $O_2$ delivery to the kidney. Exactly where this is sensed is unknown but the juxtaglomerular apparatus is felt to be involved. [3] Extra renal sources of erythropoietin have not been identified, but since tumors of liver and cerebellum can produce Ep, these organs are suspected.

IRON REUTILIZATION — An apparent block in iron release from the reticuloendothelial system occurs in uremia as in many chronic inflammatory conditions. Hemosiderosis of liver and spleen was commonly found even in nontransfused patients dying prior to the availability of dialysis. Now, of course, iron accumulation is prevented by the persistent blood loss associated with dialysis except in chronically transfused or iron treated patients.

INHIBITORS — Uremic inhibitors of erythropoiesis have been postulated but no specific agents have been isolated. There is much conflicting opinion in the literature; but, at least in acute uremia in animals and in one small study in uremic man, infusion of exogenous erythropoietin failed to stimulate the marrow. Also, Ep is higher when measured by radioimmunoassay than by bioassay, indicating that the bioassay is influenced by inhibitors in the test serum. [4]

HEMOLYSIS — Hemolysis is another major cause of the anemia of chronic renal failure. Average RBC survival is one-third of normal. However, the red cells themselves are normal. Uremic blood transfused into normal subjects has a normal survival time; but if normal blood is transfused into a dialysis patient, survival time of these red cells is shortened. Microangiopathic hemolysis as well as drug or disease-induced hemolysis is rare. Hemolysis during an uncomplicated dialysis procedure is negligible. Coombs positive anemia due to alpha methyldopa or the hemolytic anemia of collagen vascular diseases should be kept in mind. Hemolysis due to the oxidizing effect of drugs such as sulfa or phenacetin can occur, especially since the red cells often exhibit increased susceptibility to oxidants. Acute hemolytic episodes related to dialysis can occur from a variety of causes. Copper leached from copper tubing can cause an intoxication syndrome or hemolysis and death. Also if the dialysate is over-heated or hypotonic or contaminated with formaldehyde, explosive episodes of hemolysis can occur.

But the aforementioned causes of hemolysis are rare. The major reason for decreased RBC survival in dialysis patients appears to be decreased deformability of the cells, which then do not readily pass through the splenic sieve. Rosenmund et al,[5] in an important recent study, found a correlation between the filterability of red cells through filter paper and the degree of anemia, the red cell half life, and the amount of splenic sequestration in stable hemodialysis patients. They demonstrated that the spleen is filtering and removing red cells from the circulation because of altered physical properties of the cells. This impaired deformability does not seem to be caused by the presence of spherocites

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or by membrane rigidity, but rather may be due to altered flow properties of the cell contents. A poorly defined metabolic defect appears to reduce RBC defense against oxidative injury and lead to decreased hemoglobin solubility. This defect is accentuated by dialysis with untreated tap water. Splenectomy has been successful in improving the anemia in small numbers of patients in whom increased splenic red cell sequestration has been demonstrated.[6] However, splenectomy has not been widely advocated because of the risk of the procedure itself and because of the resultant decreased defense against infection.

The elucidation of one interesting metabolic defect has led to a change in dialysis technique and an improvement in the anemia.[7] Hexose monophosphate (HMP) shunt metabolism is abnormal in 75% of dialyzed patients due to a slowly dialyzable uremic inhibitor. Though the HMP shunt accounts for only 10% of red cell glycolysis, it is important because it regenerates NADPH which protects hemoglobin from oxidants. Oxidized hemoglobin is less soluble and renders the red cell less deformable. Formerly, plain tap water was used as the source of the dialysate solution against which blood is dialyzed. Chloramine, the major form of chlorine in water, further interferes with red cell hexose monophosphate shunt metabolism and oxidizes hemoglobin itself. Higgins, et al,[8] in Edmonton, recently reported marked improvement in the anemia of their patients when they installed a water treatment system. Currently, de-ionized water treatment systems are in widespread use and are even installed in the homes of home dialysis patients.

BLOOD LOSS — Blood loss is a third major contributing cause to the maintenance of the anemia. Though the menses usually cease in chronic renal failure, a few patients can continue to lose a significant amount of blood monthly with especially heavy flows sometimes attributable to the heparinization of the dialysis procedure. Treatments may have to be skipped during these times since regional heparinization is a tricky and often unsuccessful endeavor. Bleeding from the gastrointestinal tract also can prove troublesome. Ulcer disease is common and there is no good therapy for it in these patients, since magnesium containing antacids can easily lead to magnesium overload. Also bleeding from the small or large intestine with no lesion identifiable occasionally occurs. Some patients are prone to ecchymoses in the skin which represent another cause of persistent blood loss.

Blood drawing for laboratory testing and the inability to return all the blood to the patient after the dialysis procedure are unavoidable reasons for the maintenance of anemia and will lead to iron deficiency unless iron supplementation is given. Dialysis accidents such as clotting of the dialyzer, membrane leak or bleeding from the vascular access site occur from time to time.

### TABLE I
### ANEMIA OF CHRONIC RENAL FAILURE
**Causes**

1. Decreased erythropoeitin production
2. Decreased iron reutilization
3. Uremic inhibitors of erythropoeisis
4. Hemolysis
   - A. Decreased RBC filterability
   - B. Acute hemolysis
   - C. Drugs and toxins
5. Blood loss
   - A. Uterus
   - B. G.I. Tract
   - C. Skin
   - D. Blood drawing
   - E. Dialysis
   - F. Dialysis mishaps
6. Deficiencies — folate, iron, histidine
7. Hyperslenism

DEFICIENCIES — Deficiencies of folic acid, iron, and histidine, can be avoided by an appropriate diet plus supplementation. Folic acid is water soluble and thus is removed by dialysis. Histidine deficiency can occur in severely malnourished patients, whose anemia will improve when this amino acid is refed.

## COMPENSATORY MECHANISMS

The factors which determine oxygen delivery to the tissues are (1) oxygen uptake in the lungs, (2) hemoglobin concentration, (3) cardiac output, (4) $O_2$ affinity of hemoglobin. By definition, hemoglobin concentration is reduced in anemia but $O_2$ uptake in the lungs is unaltered except in cases of fluid overload or other lung disorder. Cardiac output is elevated in uremic patients. Raising the hematocrit to 30% by transfusion will bring the cardiac index back to normal but will raise the blood pressure indicating that the cardiac output goes up to compensate for the anemia but does not contribute to hypertension.[9]

In addition to greater delivery of blood to the tissues, oxygen affinity for hemoglobin is reduced due to elevated red cell 2-3 diphosphoglycerate (2-3 DPG)[10] This molecule binds to hemoglobin in such a way that hemoglobin holds on to oxygen less readily. In the lungs where oxygen tension is high, this 2-3 DPG-hemoglobin complex becomes saturated with oxygen, but at the low oxygen tension of the tissues more $O_2$ is released. Both acidosis and 2-3 DPG shift the oxyhemoglobin dissociation curve to the right, but acidosis inhibits the production of 2-3 DPG in red cells from phosphates, and 2-3 DPG levels do not rise until uremic acidosis is corrected by dialysis. Furthermore, not all patients with uremic acidosis exhibit the expected shift in the oxyhemoglobin dissociation curve. Part of the clinical improvement which uremic patients note after the onset of adequate dialysis may therefore be attributable to more oxygen delivery to the tissues. In this way, elevations of cardiac output and 2-3 DPG allow dialysis patients to tolerate sometimes extreme degrees of anemia without significant symptomatology.

### TABLE II
### ANEMIA OF CHRONIC RENAL FAILURE
**Treatment**

1. Adequate dialysis and diet
2. Minimize blood drawing
3. Efficient dialyzer blood return
4. Deionized water supply
5. Folate and iron supplementation
6. Avoid transfusions
7. Avoid bilateral nephrectomy
8. Androgens

## THERAPY

DIALYSIS — Initially, when a patient is started on chronic maintenance hemodialysis, the hematocrit falls slightly but with adequate dialysis erythropoiesis improves after several months.[1] Erythropoietin is difficult to measure in uremic patients with a bioassay, but even in some anephrics it is measureable indicating an extra-renal source of Ep. If transfusions are given, Ep levels are again undetectable. In other words, just as in anemic patients without kidney disease, transfusions suppress erythropoietin production — this is one reason to avoid transfusion. If there is rapid blood loss in a dialysis patient, Ep is detectable and is raised as expected, although levels never reach the same height as in non-renal anemias.

How much of a rise in hematocrit is needed to suppress Ep production is unknown and probably varies from patient to patient. An increase in hematocrit from 14 to 22 is enough to decrease Ep production in non-renal anemias. This feedback system probably is operable in chronic renal failure patients also. For when frequent transfusions are stopped, the hematocrit slowly rises spontaneously and Ep activity is detectable.[11] How low the hematocrit must be to stimulate erythropoietin production again probably varies from patient to patient. Hematocrit will fall to the 14 to 17 range in many before stabilizing and subsequently rising. Thus most patients, if left alone, will improve erythropoiesis just with dialysis.

REDUCTION IN BLOOD LOSS — Additional therapy for dialysis anemia should strive to keep the hematocrit at a level, usually about 25, where the patient feels vigorous and comfortable. Besides adequate dialysis, a reduction in blood loss will also help improve the anemia. Though all patients receive heparin during dialysis and many are on warfarin or anti-platelet drugs, major bleeding episodes are infrequent. Meticulous attention to blood return after dialysis as well as a reduction in the amount of blood testing can have a significant effect. Over-enthusiastic ordering of laboratory tests, a weakness peculiar especially to housestaff, can markedly worsen the anemia of a patient whose ability to increase erythropoiesis is limited. For example, blood tests after a dialysis procedure are rarely necessary.

IRON — Iron deficiency may readily develop in non-transfused patients even if blood leaks, clotting of the dialyzer or visceral bleeding do not occur. There is an obligatory blood loss in the dialyzer procedure itself. If a saline-air rinse procedure and parallel plate artificial kidneys are used, dialysis blood loss can be minimized to as little as 5 ml blood per run; and if blood drawing is restricted to 18 ml per month, blood loss per year can theoretically be as low as 1000 cc. Figuring an average hematocrit of 25, minimum iron loss per patient per year is approximately 250 mg. This figure is based on the Tucson experience and is much lower than the published experience in other centers.[12]

Because iron absorption, when measured under controlled conditions, is normal in most studies, dialysis patients should easily be able to replenish depleted supplies with oral supplementation.[13] However, occasional patients are found to be iron deficient, defined as reduced stainable marrow iron, despite oral supplementation. Clinical factors which may inhibit true iron absorption are: (1) gastric hypoacidity which is found in the majority of dialysis patients despite elevated gastrin levels, (2) administration of bicarbonate or other alkali, (3) ingestion of aluminum hydroxide which binds iron in the gut, (4) decreased iron absorption if the iron pills are taken with meals.[14] Furthermore, it is not clear that oral iron is utilized as efficiently as parenterally administered iron.

Iron deficiency is difficult to recognize in uremic patients if conventional tests are used. Microcytosis and lowering of the MCV rarely occur. Bone marrow iron examination is the definitive diagnostic procedure, in the absence of recent acute blood loss or transfusion or parenteral iron therapy. But it is an invasive procedure and still gives only a semiquantitative estimate of iron stores. Serum iron does not correlate with marrow iron. If saturation of plasma iron binding capacity is less than about 20%, marrow iron is usually low or absent, but per cent saturation is above 20 in many instances of absent marrow iron.

FERRITIN — Recently serum ferritin determinations have become routinely available. Ferritin is a large protein which is the major tissue depot of iron, mainly in the form of its insoluble derivitive hemosiderin. Serum ferritin levels in dialysis patients correlate well with marrow iron stores and provide an easy method of judging the need for iron therapy.[15] Serum ferritin values below 100 NG/DL coupled with a transferrin saturation below 20% indicate iron deficiency probable and a probably good response to iron.[16] Ferritin levels are elevated by transfusion, iron infusion, and acute inflammation, and are well above the normal range in most dialysis patients.

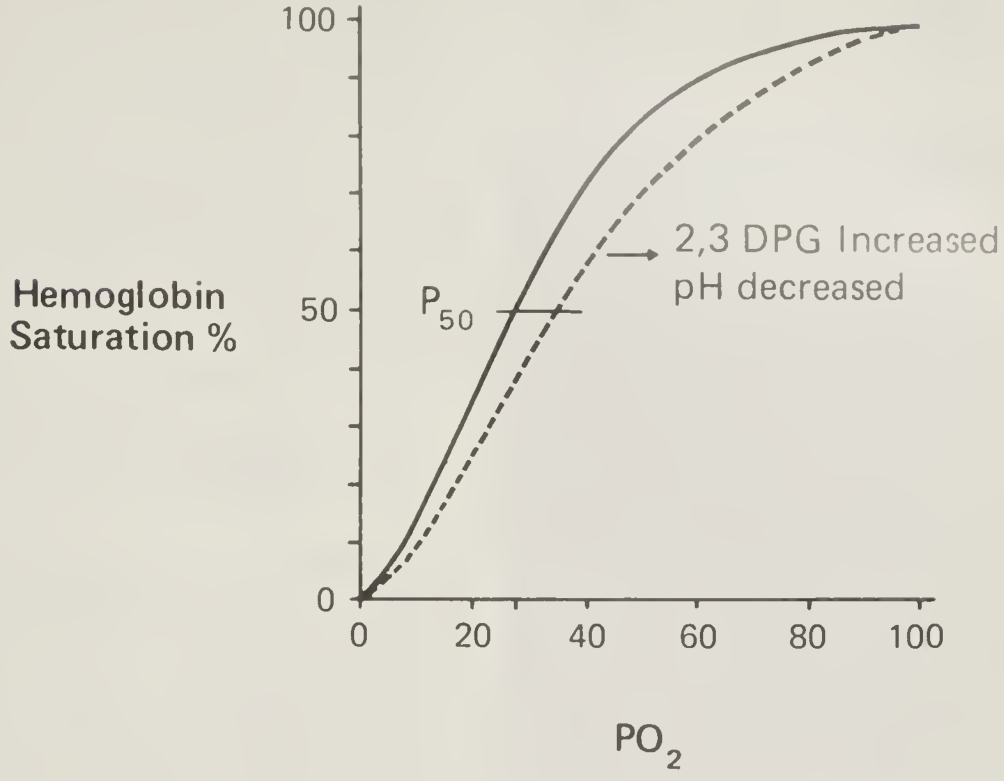

Figure 1.
**Rightward shift of the oxyhemoglobin dissociation curve by acidosis and increased 2-3DPG.**

IRON-DEXTRAN — All dialysis patients should receive oral iron supplementation. The use of iron-dextran (Inferon) should be restricted to those with persistent iron deficiency despite oral iron, as judged by ferritin levels and transferrin saturation. Anaphylaxis and death have been reported from iron dextran administration.[17] Inferon is administered intravenously at the end of dialysis with 0.2cc given initially as a test dose and 2cc given during each of the following 10 dialyses.

DIET AND VITAMINS — An adequate diet and regular folic acid supplementation are also necessary. Prenatal vitamin formulations which contain iron and folic acid are available over-the-counter and are probably the cheapest and easiest way to supply essential vitamins and minerals.

ANDROGENS — Androgens will stimulate erythropoiesis in most dialysis patients [18]. They work by increasing both renal and extra-renal erythropoietin production. However, anephrics have a much less satisfactory response. Other beneficial effects of androgens are to increase 2-3 DPG levels and to mobilize iron stores from the reticuloendothelial system. The infrequent but troublesome side effects of androgens are masculinization, priapism, and liver dysfunction. Recommended dosage schedules are nandrolone decanoate 100 mg intramuscularly (IM) weekly, or oral fluoxymesterone 10-20 mg daily for females and 30-80 mg daily for males, or testosterone propionate (or other ester) 150 mg IM twice weekly. An effect may not be evident for up to six months; but, thereafter, dosage may be decreased. Androgen therapy should be reserved for dialysis patients who do not respond to conventional treatment and who have mild symptomatology such as easy fatigability.

TRANSFUSION — Transfusions should be avoided in all patients with chronic renal failure unless there is an acute blood loss or unless the patient is very symptomatic from the anemia. In actual practice dialysis patients are almost never transfused anymore, though transfusions were routinely given in many centers until recently. Undesirable effects of transfusion include: (1) suppression of erythropoiesis, (2) transmission of hepatitis, (3) iron overload, (4) risk of sensitization to HLA antigens, and (5) increased expense and inconvenience. The risk of hepatitis in dialysis units needs to be stressed. To prevent spread of this occasionally devastating disease, HAA positives are isolated and dialyzed under rigid precautions; and staff and patients are regularly screened for presence of the antigen.

*Continued on page 712*

Arizona
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# Editorials

## Changing Faces

During the past three months changes have been made in *ARIZONA MEDICINE* which are hoped will make the journal more relevant to its readers. These alterations were made possible by the pioneering efforts of all the preceding editors but most recently by Drs. John Green and John Kennedy. With the ushering in of a "new team," the journal is attempting to refocus its direction and format to make it even more readable and helpful.

The most noticeable change is on the cover which is now being used as a table of contents. This has been done to enable the readers to quickly review what is included in each issue. Perhaps an article of interest which would have been missed otherwise will be found in this way. It also focuses attention to the main thrust of *ARIZONA MEDICINE*, i.e., *to inform* the practicing physician. In this vein, greater attention is being given to review-type articles rather than to esoteric case reports or original contributions. The greater emphasis on recertification in medicine is making the former of greater value than the latter. *ARIZONA MEDICINE* is not a repository for articles which can't be published elsewhere or which are so esoteric they have limited reader interest. Meritorious original studies should be published in either clinical or basic research journals which have the expertise to fully evaluate them. Although research studies will be considered, their priority will not be as great as articles aimed at explaining and reviewing current areas of medical practice. The cooperation of the University of Arizona Faculty in this regard is noteworthy.

As a consequence of these changes *ARIZONA MEDICINE* will hopefully be more useful to its readers. It is they who matter most and their comments are eagerly awaited by the "faces" who have made the "changes."

Marshall B. Block, M.D.
Editor

## Words of Prophecy

"A democracy can only exist until the voters discover that they can vote themselves largesse from the public treasury." Although this may sound very contemporary, this quotation is attributed to Alexander Tytler, a British historian, in his work *Universal History* published in 1838. The quotation continues: "From that moment on, the majority always votes for the candidates promising the most benefits from the public treasury, with the result that a democracy always collapses over loose fiscal policy, always followed by a dictatorship. The average age of the world's greatest civilizations has been 200 years."

Almost 100 years later Franklin D. Roosevelt opened Pandora's Box here in the United States with the Social Security system. Hundreds of Washington, D.C. politicians have used this primer for the development of their own give-away philosophy to please the voters and thereby insure their re-election. State and local politicians have followed the same outline by pressing for more and more matching funds. The voters have also learned this lesson from the politicians and assure themselves continuing largesse by voting for the candidates which promise the most. Too many politicians with too many generous programs have helped produce our huge national debt and galloping inflation.

Professor Tytler's own country, Great Britain, has clearly proven the wisdom of his words. Their National Health System has probably damaged their financial structure more than any other single thing. It has certainly brought them tumbling down from one of the world's great nations to practically no account on the international scene. The British people fell prey to this trap. What is to prevent the American Public from doing the same? Aren't we indeed doing this at present?

Unfortunately the answers are in the affirmative. The American Public is fooling itself to some degree, but many political observers feel that perhaps the tide is turning. We, as professionals in constant contact with the voting populace are opinion makers who can do much to help turn the tide. We are compelled to advise our patients particularly of the fiscal suicide associated with National Health Insurance. If we could only get that simple message across it would go far towards preventing that ultimate demise of democracy. If we do not succeed, Alexander Tytler's words of prophecy will doubtlessly ultimately be fulfilled.

J. F. Kahle, M.D.,
President ARMA

## Internal Medicine — 1977

Over the past three decades, university departments of medicine have undergone extensive changes in goals and activities. The basic goals of the Department of Internal Medicine at the University of Arizona College of Medicine are threefold: 1) education, 2) health care delivery, and 3) research. Each of these activities is complex in scope and interdependent in function.

The Department of Internal Medicine places a heavy emphasis on the education of students, interns, residents, and fellows to ensure a competency of patient care in the areas of inpatient and ambulatory medicine. The need for primary care physicians has been appreciated by the Department which has recently formalized this important teaching function under the direction of Dr. Jay Smith. This provides for broad, but indepth, training of students, interns, and residents in all aspects of general medicine.

The delivery of both general and specialized medical care is a second concern of the Department and is, of course, directly related to the teaching function. The emphasis in training is not only on the definition of diagnostic skills and tools, but also the strategies of treatment and dealing with the financial and social service aspects of medical care. The Department continually strives to improve the quality of health care delivered to patients and this is interrelated with the third goal of the Department, i.e., research.

Research is an important facet of the Department's activities in its support of teaching and service commitments. The Department has meteored in recent years to a cohesive group of physicians with national and international recognition. Unique contributions have been made in both the basic and clinical science areas of medicine and have been attested by the financial support from both the private and government sectors. The high quality and success of medical research endeavors by the Department have attracted both trainees and patients from around the world.

The ten sections of the Department of Internal Medicine (see table below) comprise the largest Department in the College of Medicine. Each section is committed to the goals defined above and continually seek new avenues of medical research, service, and educational activities. This is evidenced, for example, by an expanding program of continuing medical education to meet the varied and highly diversified needs of Arizona constituents. An update of current activities, new research, therapeutic advances, and other activities of each Section will appear in subsequent issues of *Arizona Medicine.*

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The Department of Medicine currently is in a phase of growth and maturation. Staffed by excellent physicians, we expect much in the immediate future with respect to leadership in the teaching and service areas, as well as a continued commitment to the detection of disease processes and maximally effective therapies.

Louis Kettel, M.D., Dean

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## DANGER AHEAD: RATIONING OF CARE

### I Can Get It For You Wholesale

In medicine as in other purchases, the buyer gets what he pays for. There is no steak-house medicine at hash-house prices. Prices of care cannot be harshly cut without cutbacks in the quality or quantity of care.

Those hard-boiled truths are obvious to us physicians, who deal with costs as a day-to-day reality rather than a pliable abstraction. And in its somewhat devious way, the federal government seems to perceive those truths, too.

The government's cluster of programs and proposals for containing costs is made to look like pure benefit for the patient, without any actual loss on his part. What they generally boil down to upon analysis, however, is rationing of care.

This was a central point — and a central danger — posed by Richard E. Palmer, M.D., in addressing the AMA's annual convention last June as its outgoing president. Doctor Palmer identified rationing of care as a common denominator of proposed restraints in so-called unnecessary surgery covered by public funds, HMOs, the Health Planning Act of 1974, the push for generic drugs, and the proposed "cap" on hospital charges as a prelude to the Administration's National Health Insurance proposal.

On the proposed ceiling on hospital charges, he asked:

"Is it not predictable that the most creative, resourceful, and conscientious hospitals would suffer from such economic artifice? Or that in treating all hospitals alike, the cap would penalize those that are already efficient, as a Senate health expert was quoted?"

Apropos hospitals, it also must be recognized that some lack efficiency; that some communities are over-bedded; and that costs — the Number One health-care concern of the public — can be restrained without disastrous results to quality. The medical field — through such means as the AMA's Commission on the Cost of Medical Care — must do its practical best against the economics that encourage federal rationing of health services.

In the matter of HMOs, Doctor Palmer noted that these have been hailed on Capitol Hill as "a great piece of ammunition" against rising medical costs. But what about the amount of care? he wondered. Recent studies indicate that HMO physicians see their patients less often and give less service — including preventive care — than do fee-for-service physicians.

Shrinkage of service also could be the upshot of any NHI program that would ape Britain's National Health Service, said Doctor Palmer. For it has happened there.

As he summed up: "No individual — and ours is a nation of individuals — wants his care to fall victim to cost-effective common denominators. No invididual wants his own care to be rationed."

Physicians at the local level should get this point across — as the government sharpens its ax against necessary costs.

AMA Public Affairs Division

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## UofA GRAND ROUNDS
## Anemia of Chronic Renal Failure

*Continued from page 709*

Frozen deglycerolized or leucocyte-poor blood should be used for transfusion of patients considered for transplantation; and related donor transplantation should be considered in all patients under 55 years of age. It was thought that removal of white cell antigens from transfused blood by these techniques would decrease presensitization and increase transplant success rates. However, Opelz and Terasaki and others have shown that cadaver graft survival is much poorer in recipients who never received transfusions or received only frozen blood compared to multiply transfused patients.**(19)** Induction of immune unresponsiveness by transfusions may explain these unexpected findings. But the use of transfusion specifically to enhance transplant outcome is untested and should not be attempted except in a research setting because of the previously mentioned problems with transfusions and because of the known risk of presensitization of the potential recipient against large numbers of HLA antigens.

Other suggestions that can be summarized from preceding discussion are to avoid copper tubing, use de-ionized water treatment systems to remove nitrates, chloramine, and other contaminantes, avoid bilateral nephrectomy, and watch for potential hemolytic drug reactions. Cobalt chloride has been used experimentally to stimulate erythropoietin synthesis but should be restricted to research use because of unacceptable side effects. Erythropoietin is not available for use at this time. A prostaglandin which stimulates erythropoiesis has been identified and is being tested.

### SUMMARY

The normochromic normocytic anemia of chronic renal failure has a multitude of causes, including decreased erythropoietin production, uremic inhibitors of marrow erythrocytosis, shortened red cell survival, blood loss and nutritional deficiencies. Specific treatment, such as transfusion, is rarely needed prior to beginning dialysis. Dialysis therapy itself will slowly lead to an improvement in erythropoiesis. Iron deficiency will commonly develop due to bleeding, obligatory dialysis blood loss, and blood drawing for laboratory testing; and can be identified by measuring serum ferritin and transferrin saturation. Supplementation of iron and folate is required. Androgens, which stimulate Ep production, and parenteral iron should be used only in selected patients. Transfusions should be avoided except for acute blood loss. Because of elevated cardiac output and increased red cell 2-3 DPG levels, oxygen delivery to the tissues is enhanced and atients are not usually symptomatic om their anemia.

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8. DePalma, J.R., and Abukurah, A., Androgen therapy in hemodialysis patients. Proc. Dialy. Transp. Forum 3:123, 1972.

9. Opelz, G. and Terasaki, P.I., Poor kidney-transplant survival in recipients with frozen-blood transfusions or no transfusions. Lancet 2:696, 1974.

## *ArMA Reports*

### EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona on Friday, July 22, 1977, convened at 6:41 p.m., John F. Kahle, M.D., Chairman and President, presiding.

### ARIZONA HEALTH SERVICE CORPS

Drs. Studt and Kossuth reviewed the AHSC proposal in some depth. Extensive discussion ensued, but no specific action was taken.

### PSRO POLLING

Mr. Robinson presented the letter from the Health Care Financing Administration of HEW requesting information about the Association's position regarding PSRO prior to January 1, 1976, specifically asking if we had adopted a position in opposition to PSRO. He pointed out that the Association had adopted Resolutions 9-74 and 9-75 in opposition to PSRO. Drs. Dexter and Ward presented a current status report of the developments of PSROs in their areas. .............................. Received

### DEPARTMENT OF HEALTH SERVICES

**Director's Report**

Dr. Dandoy reported on the current status of Medicaid and the development of regulations regarding Laetrile. She also reported that there is a new maternal care task force looking into the current phenomena of home deliveries and lay midwives. She also announced that the State Hospital is undergoing a complete reorganization at the present time.

**Rate Review for Hospital Based Physicians**

Mr. Jacobson reviewed the recent Attorney General's Opinion 77-64 (R75-693) dated March 15, 1977 which would subject physician's fees to rate review when the physician arranges to have a health care institution bill and collect for his services.

He reported on a meeting held June 15, 1977 with the involved parties plus reviewing the current status of the matter.

It was pointed out that the DHS was planning on putting out a letter on this matter. Dr. Dandoy stated that the letter has been stopped until further investigation and review of the matter can be accomplished.

### AMA DELEGATION

It was agreed to have the AMA Delegates and Alternates attend the November 18, 1977 meeting of the Executive Committee to discuss matters before the AMA House of Delegates.

### AMA COMPREHENSIVE HEALTH CARE INSURANCE ACT

The AMA's letter of July 7, 1977 requesting our comment on their new Comprehensive Health Care Insurance Act was referred to Wallace A. Reed, M.D., Chairman, Governmental Services Committee for response.

### ArMA FOUNDATION

IT WAS MOVED AND CARRIED TO HAVE THE PHRASE "A PROGRAM OF THE ARIZONA MEDICAL ASSOCIATION" APPEAR ON THE STATIONERY, NEWSLETTERS, ETC. OF ALL PROGRAMS SUPPORTED BY THE FOUNDATION SUCH AS THE ARIZONA PERINATAL PROGRAM, PROJECT APACHE, ARIZONA HEALTH SERVICE CORPS, ETC.

### HOSPITAL DISCHARGE ABSTRACT DATA SYSTEM

Dr. Sattenspiel reviewed the subject program of the DHS.

IT WAS MOVED AND CARRIED TO APPROVE THE PROPOSAL AS PRESENTED.

### BOARD AGENDA

The committee reviewed the agenda for the Board of Directors meeting scheduled for July 23, 1977.

### THE ARIZONA MEDICAL ASSOCIATION, INC.
### PUBLIC RELATIONS COMMITTEE

Meeting of the Public Relations Committee of the Arizona Medical Association, Inc. held Thursday, August 4, 1977 at 810 West Bethany Home Road, Phoenix, Arizona, convened at 6:55 p.m., Ira B. Ehrlich, M.D., Chairman, presiding.

**"Medical Opinion" — TV Series**

Mr. Petersen reported that the "Medical Opinion" TV Series aired each Saturday evening on KOOL TV, has in their opinion, been very successful. The following topics have been discussed thus far with panelists scheduled through the end of September 1977:

| TOPIC | PANELISTS |
|---|---|
| Pregnancy | James Austin, M.D.<br>Maynard Smith, M.D. |
| Vitamins & Nutrition | Glen Friedman, M.D.<br>Alice Shoemaker |
| Medical Emergencies | Mark Engelman, M.D.<br>Donald B. Kunkel, M.D. |
| Influenza (Swine Flu) | Phillip Hotchkiss, DVM<br>Donald Schaller, M.D. |
| Childhood Diseases | Charles Dries, M.D.<br>Mary J. McGee, M.D. |
| Birth Control | Joseph W. Hanss, M.D.<br>C. Gene Davis, M.D. |
| Alcoholism | Thomas E. Bittker, M.D.<br>Robert Bleakman, M.D. |
| Mental Retardation | Raymond Jennett, M.D.<br>Alvin D. Sidell, M.D. |

| | |
|---|---|
| Eye Problems | Robert F. Lorenzen, M.D.<br>Donald Miles, M.D. |
| V.D. | Mr. Walter Page<br>George Stavros, M.D. |
| Arthritis | Robert Lumsden, M.D.<br>Benjamin Harris, M.D. |
| Stress | Jerome Gerendassy, M.D.<br>Stuart Gould, M.D. |
| Athletic Injuries | William C. Brainard, M.D.<br>P. James Nichols, M.D. |
| Dental Disease | William E. Hawkins, D.D.S.<br>Martin B. Robbins, D.D.S. |
| Heart Disease | Earl J. Baker, M.D.<br>Stephen Leshin, M.D. |
| Digestive Disorders | John R. Harlan, M.D.<br>Ashton B. Taylor, M.D. |
| Sinuses | Peter Nutley, M.D.<br>Neil Ward, M.D. |
| Cancer | James Corrigan, Jr., M.D.<br>Robert Heusinkveld, M.D. |
| Hearing | Douglas W. Frerichs, M.D.<br>Stuart Z. Lanson, M.D. |
| Childbirth | Leon Asadourian, M.D.<br>Edward Sattenspiel, M.D. |
| Mental Health | John Clymer, M.D.<br>William F. Sheeley, M.D. |
| Allergies | Daniel H. Goodman, M.D.<br>Rosamond C. Romero, M.D. |
| Weight Control | Marshall Block, M.D.<br>Clifford Ernst, M.D. |
| Menopause | Lynn Newman, M.D.<br>David Pent, M.D. |
| Heredity | Melvin Cohen, M.D.<br>Robert Crawford, M.D. |
| Medications | (Mr.) David Wastchak, Ph.<br>John Heilman, M.D. |
| Respiratory Diseases | Howard Kravetz, M.D.<br>Gerald Schwartzberg, M.D. |
| Poisonings | Gerry Hooper, M.D.<br>S. A. Blubaugh, M.D. |
| Dentures | Marvin Fitzgerald, D.D.S.<br>Richard Matsuishi, D.D.S. |
| Blood & Blood Diseases | Paul V. Baranko, M.D.<br>Melvyn C. Rothman, M.D. |
| Glandular Disorders | Joseph F. Kirschvink, M.D.<br>Jerome H. Targovnik, M.D. |
| "Open Line" | Alan L. Gordon, M.D.<br>F. Darwin Zahn, M.D. |
| Female Disorders | Donald E. Lee, M.D.<br>Max D. Lind, M.D. |
| Home Emergencies | W. Scott Chisholm, M.D.<br>William T. Evans, M.D. |
| Terminal Diseases & Dying | |
| Immunizations | |
| Drug Abuse | |
| Back Problems | |
| Aging & Diseases of the Elderly | |
| Plastic Surgery | |
| Foot Problems | |

Dr. Ehrlich asked that each member of the Committee give consideration to future topics for the "Medical Opinion TV Series" as well as participants to serve as panelists. Suggestions should be directed to Mr. Petersen.

### "Health Matters"

Mr. Petersen informed the Committee that the following Arizona newspapers currently receive "Health Matters" columns on a weekly basis. Subjects covered recently include "tennis toe," "overexposure to sun," "adolescent adjustment problems," and "calories." The subject matter for these short articles are generally received from the AMA, however, the Committee members are encouraged to submit short papers of public interest for presentation to Arizona newspapers.

### ARIZONA NEWSPAPERS CURRENTLY RECEIVING "HEALTH MATTERS" COLUMN

AJO COPPER NEWS
APACHE COUNTY INDEPENDENT-NEWS — St. Johns
APAPCHE SENTINEL — Apache Juncti
ARIZONA INFORMANT — Phoenix
ARIZONA NOW — Phoenix
ARIZONA RANGE NEWS — Wilcox
ARIZONA SILVER BELT — Globe-Mia
ARIZONA TERRITORIAL, THE — Tucson
BISBEE DAILY REVIEW
CHANDLER ARIZONAN, THE
COOLIDGE EXAMINER
COPPER ERA, THE — Clifton
DAILY DISPATCH, THE — Douglas
EASTERN ARIZONA COURIER — Safford
GLENDALE NEWS-HERALD, THE
GRAHAM COUNTY GUARDIAN, THE Safford
GREEN VALLEY NEWS
LAKE POWELL CHRONICLE — Page
MARYVALE STAR, THE
NOGALES HERALD
PARKER PIONEER, THE
PAYSON ROUNDUP, THE
PRESCOTT COURIER, THE
RED ROCK NEWS — Sedona
SAN MANUEL MINER
SCOTTSDALE DAILY PROGRESS
SIERRA VISTA HERALS-DISPATCH
SUN VALLEY SPUR SHOPPER Mesa
TODAY — Phoenix
VERDE INDEPENDENT, THE — Cotto wood
WESTSIDER, THE — Avondale
WHITE MOUNTAIN INDEPENDENT - St. Johns
WICKENBURG SUN, THE
WINSLOW MAIL, THE
YUMA DAILY SUN, THE

### Resource For News Media

Mr. DeVries brought to the Committe attention the need for a resource of medi information in behalf of the news med This would assist the average news person a better understanding of medical data, a therefore, a better presentation to the publ

IT WAS MOVED AND CARRIED T RECOMMEND TO THE BOARD OF D RECTORS THAT THE PUBLIC REL TIONS COMMITTEE BE DESIGNATE AS A RESOURCE BODY FOR MEDICA INFORMATION.

# Future Medical Meetings

## CONTINUING MEDICAL EDUCATION

E FOLLOWING INSTITUTIONS AND ORGANIZATIONS VE RECEIVED ACCREDITATION FOR CONTINUING DICAL EDUCATION FROM THE COUNCIL ON MEDICAL UCATION OF THE AMA

ZONA STATE HOSPITAL PHOENIX
ERT SAMARITAN HOSPITAL MESA
OD SAMARITAN HOSPITAL PHOENIX
ALTH MAINTENANCE ASSOCIATES
OENIX INDIAN MEDICAL CENTER
RICOPA COUNTY GENERAL HOSPITAL PHOENIX
MORIAL HOSPITAL PHOENIX
LUKE S HOSPITAL AND MEDICAL CENTER PHOENIX
JOSEPH S HOSPITAL AND MEDICAL CENTER
HOENIX
CSON HOSPITALS MEDICAL EDUCATION PROGRAM
UCSON
OF A HEALTH SCIENCES CENTER
TERANS ADMINISTRATION CENTER PRESCOTT
TERANS ADMINISTRATION HOSPITAL PHOENIX

e accredited institutions and organizations above produce variety of continuing medical education programs Each credited institution and organization is responsible for signating which of these programs meet ArMA's require- nts for Category I credit Physicians who participate in ograms which are designated Category I by accredited stitutions will receive Category I credit toward the ArMA rtificate in CME and the AMA's Physicians Recognition vard

## NOVEMBER

**OMBINED GRAND ROUNDS**

ctober 5, 1977, Good Samaritan Hospi- l. Sponsor: Family Practice Residency ograms of St. Joseph's, Good Samari- n, and Scottsdale Memorial Hospitals. ontact: Ann Larsen, R.N., Program Co- dinator, Family Practice Residency Pro- am, St. Joseph's Hospital and Medical enter, Phoenix, AZ 85013. Approved for quired hours toward the AMA Certificate Continuing Medical Education.

**RIZONA COLLEGE OF MEDICINE LUMNI ASSOCIATION, REUNION**

ovember 5, 1977, 8 a.m. to Noon. ponsor: Arizona Health Sciences Center. ontact: Hugh Harelson, Public Informa- on, U of A Health Sciences Center, ucson, AZ 85724. Approved for 4 re- uired hours toward the ArMA Certificate Continuing Medical Education.

**ULMONARY DISEASE**

ovember 5 & 6, 1977. Maricopa County eneral Hospital, Phoenix, AZ 85008. ponsor: Radiology Department, MCGH. ontact: Alex Newman, M.D., Dept. of adiology, Maricopa County General Hos- ital 2601 East Roosevelt, Phoenix, AZ 5008. Approved for required hours to- ard the ArMA Certificate in Continuing ledical Education.

**ERINATAL PRESPECTIVE '77**

lovember 7 - 10, 1977, Hyatt Regency lotel, Phoenix, AZ. Sponsor: Grand Can- on-Saguaro Chapter, March of Dimes. ontact: William J. Daily, M.D. or Mr. ames G. Smith, c/o March of Dimes, 316 V. McDowell Rd., Phoenix, AZ. Approved or 40 required hours toward the ArMA ertificate in Continuing Medical Educa- ion.

**IRST INTERNATIONAL CONFERENCE ON SUBSTANCE ABUSE**

November 8 - 13, 1977. Adams Hotel, Phoenix, AZ. Sponsor: Do It Now Foundation. Contact: Victor Pawlak, 1301 E. McDowell Rd., Phoenix, AZ 85006. Approved for hour for hour elective credit toward the ArMA Certificate in Continuing Medical Education.

**AASECT "Issues of Human Sexuality in Medicine"**
**Law, Education, Churches and Soc. Agen.**

November 18, 19, 1977. Adams Hotel, Phoenix, AZ. Sponsor: AASECT. Contact: Roger T. Crenshaw, M.D., Ste. 555 Washington St., San Diego, CA. Joseph W. Hanss, M.D., 20211 North Central, Phoenix, AZ. Edward Sattenspiel, M.D., 333 W. Thomas Road, Phoenix, AZ. Approved for 16 Required hours toward the ArMA Certificate in Continuing Medical Education.

**WORKSHOP ON MEDICAL ETHICS: QUESTIONS ON MORALITY**

November 12, 13, 1977, Franciscan Renewal Center. Contact: Miss K. Brown, Franciscan Renewal Center, 5802 E. Lincoln Dr., Scottsdale, AZ 85252.

## DECEMBER

**CULTURE AND NUTRITION IN THE REPRODUCTIVE CYCLE**

December 2, 1977. Scottsdale Center for the Arts, Scottsdale, AZ. Sponsor: Nutrition Council of AZ, Professional Education Prog. Contact: Junetta Barrett, Dir. Food and Nutrition Division, 1535 W. Jefferson, Phoenix, AZ 85004. Approved for 5 required hours toward the ArMA Certificate in Continuing Medical Education.

**THE PHYSICIAN AS COUNSELOR IN MARRIAGE AND SEXUAL DYSFUNCTIONS.**

December 9 & 10, 1977. Plaza International Hotel, Tucson, AZ. Sponsor: Department of Continuing Medical Education. Contact: Anthony F. Vuturo, M.D., U of A Health Sciences Center, Tucson, AZ 85724. Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

**PEDIATRIC ORIGINS OF CHRONIC LUNG DISEASE**

December 14, 1977. Yuma Regional Medical Center, Yuma, AZ. Sponsor: Arizona Health Sciences Center, Contact: R. Cannell, M.D., 2451 Ave. A & Eight, Yuma, AZ. Approved for 1 required hour toward the ArMA Certificate in Continuing Medical Education.

## JANUARY

PEDIATRIC UPDATE 1978

January 16-19, Doubletree Inn, Scottsdale, AZ Sponsor Dept of Pediatrics of St. Joseph's Hospital and Medical Center, Phoenix, AZ Contact Melvin L. Cohen, M.D., Dept. of Pediatric Education, St Joseph's Hospital and Medical Center, 350 W. Thomas Road, Phoenix, AZ 85013 Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education an A.A.F.P. credits

**FIFTH ANNUAL BARROW NEUROLOGICAL INSTITUTE SYMPOSIUM,**

January 19-21, 1978. Camelback Inn, Phoenix, Az. Sponsor: Barrow Neurological Institute of St. Joseph's Hospital & Medical Center. Contact: Richard A. Thompson, M.D., Barrow Neurological Institute, 350 W. Thomas Rd., Phoenix, AZ 85013.

**4th ANNUAL SPORTS MEDICINE SYMPOSIUM**

January 21, 1978, 8 a.m. to 5 p.m. Safari Hotel, Scottsdale, AZ 85252. Sponsor: Arizona Medical Association, Inc. Contact: Paul Steingard, D.O. or William Brainard, M.D., Arizona Medical Assoc., Inc., 810 W. Bethany Home Rd., Phoenix, AZ 85013. Approved for 8 required hours toward the ArMA Certificate in Continuing Medical Education.

## FEBRUARY

**AAFP ANNUAL MEETING 1978**

February 1-4, 1978. Doubletree Inn, Scottsdale, AZ. Sponsor: Arizona Academy of Family Physicians. Contact: Mrs. June Boykin, 1027½ E. Camelback Rd., Phoenix, AZ 85014. Approved for required hours toward the ArMA Certificate In Continuing Medical Education.

**SOUTHWESTERN SEMINAR ON NEUROMUSCULAR DISORDERS IN CHILDREN**

February 17-18, 1978. Health Sciences Center, Main Auditorium, Tucson, AZ. Sponsor: U of A Health Sciences Center Dept. of Neurology. Contact: Lawrence Z. Stern, M.D., Dept. of Neurology, U of A Health Sciences Center, Tucson, AS 85724. Approved for 9 required hours toward the ArMA Certificate in Continuing Medical Education.

**ARIZONA SOCIETY OF ANESTHESIOLOGISTS ANNUAL MEETING**

February 25 & 26, 1978. Scottsdale Hilton Hotel, Scottsdale, AZ. Sponsor: Arizona Society of Anesthesiologists. Contact: Casey D. Blitt, M.D., Dept. of Anesthesiology, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 9 required hours toward the ArMA Certificate in Continuing Medical Education.

## MARCH

**VALLEY OF THE SUN DERMATOLOGIC SYMPOSIUM**

March 2-5, 1978. Casa Blanca Inn, Scottsdale, AZ. Sponsor: Phoenix Dermatological Society, & University of Arizona. Contact: Dr. Fillmore K. Bagatela, Dr. Peter J. Lynch, 333 E. Virginia, Phoenix, AZ. Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

### DAY OF HEMATOLOGY

March 3, 1978, Camelback Inn, Scottsdale, AZ Sponsor St Joseph's Hospital and Medical Center Phoenix, AZ Contact Ethelann Murray, M D, St Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, AZ 85013 Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

### THE SECOND NATIONAL CONFERENCE ON OTITIS MEDIA

March 3-5, 1978, Doubletree Inn, Scottsdale, AZ Sponsor Univ of Arizona College of Medicine and the Indian Health Service Contact Office of Continuing Medical Education and Outreach, University of Arizona College of Medicine, Tucson, AZ 85724 Approved for 17 5 required hours toward the ArMA Certificate in Continuing Medical Education.

### CURRENT CONCEPTS IN CEREBROVASCULAR DISEASE.

March 11-19, 1978, Sun Valley Inn, Sun Valley, Idaho. Sponsor: Office of Continuing Medical Education & Dept. of Surgery, U of A. Contact: Jerry Goldstone, M.D. & Wesley S. Moore, M.D., U of A Health Sciences Center, Tucson, AZ 85724. Approved for 22.3 required hours toward the ArMA Certificate in Continuing Medical Education.

### GASTROENTEROLOGY FOR CLINICIANS — 1978

March 13-15, 1978. Del Webb's TowneHouse, Phoenix, AZ. Sponsor: American College of Gastroenterology & the Institute of Gastroenterology, Good Samaritan Hospital. Contact: David C. H. Sun, M.D., Good Samaritan Hospital, Phoenix, AZ 85036. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

## MAY

### UPDATE: PRIMARY CARE 1978

May 3-6, 1978. Arizona Health Sciences Center Sponsor: U of A Continuing Medical Education. Contact: A. Vuturo, M.D., Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 25 required hours toward the ArMA Certificate in Continuing Medical Education.

## JULY

### 21st ANNUAL RUIDOSO FAMILY PRACTICE SEMINARO

July 17-20, 1978. Headquarters Inn, of the Mountain Gods at Mescalero, New Mexico. Sponsors: New Mexico Chapter of the American Academy of Family Physicians. Contact: Bob Reid, Convention Dir., P. O. Box 456, Sunland Park, N.M. 88063. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

## MONTHLY OR WEEKLY

### OFFICE PSYCHIATRY FOR THE PRIMARY PROVIDER

2nd Monday of month 4811 N 7th Street, Phoenix, AZ. Sponsor Arizona Health Plan Contact T R Bittker, M.D, Box 5000, Phoenix, AZ 85010 Approved for required hours toward the ArMA Certificate in Continuing Medical

### CLINICAL IMMUNOLOGY, ALLERGY AND RHEUMATOLOGY ROUNDS

Every Friday Noon-1 p.m. Sponsor U of A College of Medicine, Dept of Internal Medicine, Clinical Immunology Section. Contact John Boyer, M D, U of A College of Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### ENDOCRINOLOGY SEMINAR

Every Thursday, Noon-1 p m., 1st, 3rd & 5th Thursday—Rm N318, VA Hospital, 2nd & 4th Thursday, Rm 6505, Tucson Medical Center, Sponsor U of A College of Medicine, Department of Internal Medicine, Department of Internal Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### HEMATOLOGY-ONOCOLOGY CLINICAL CONFERENCE

Every Tuesday, Noon-1 p.m. 1st, 3rd & 5th Tuesdays—Rm. 6505, AZ Medical Center 2nd & 4th Tuesdays—Rm. N318, Veterans Adm Hospital Sponsor U. of A College of Medicine, Dept of Internal Medicine Contact Sidney Salmon, M.D, U. of A College of Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### GRAND WARD ROUNDS—TRAUMA

Every Tuesday, 8 a.m Arizona Medical Center, Tucson, AZ Sponsor U of A College of Medicine Surgery Dept., Trauma Section, Contact Martin Silverstein, M.D. U of A College of Medicine, Tucson, AZ 85721. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### PEDIATRIC GRAND ROUNDS

Every Tuesday, 12:30 p.m. - 1:30 p.m. Alternates between Tucson Medical Clinic and U of A Health Sciences Center. Sponsor U of A College of Medicine, Dept. of Pediatrics. Contact: Hugh Thompson, M.D., 1501 N. Campbell, Tucson, AZ. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### PROBLEM CASE WORKSHOPS

3rd Monday of each month 7 30 a m Room 4410, Arizona Medical Center, Tucson, AZ. Sponsor Division of Ophthalmology, U. of A College of Medicine Contact H. E Cross, M D, Ph D, Arizona Medical Center, Dept. of Surgery, Tucson, AZ. Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

### MEDICAL GRAND ROUNDS

Every Wednesday Noon-1 p m 1st, 3rd & 5th Wednesday—Staff Conf Rm, VA Hospital 2nd & 4th Wednesday—Rm 5403, Arizona Medical Center Sponsor U of A College of Medicine, Dept of Internal Medicine Contact Jay Smith, M D, U of A College of Medicine, Tucson, AZ 85721. Approved for 1 required hour per s sion toward the ArMA Certificate in Continu Medical Education.

### NEUROSCIENCES SEMINAR

Every Friday, 7:30 a.m. U of A He Sciences Center, Rm. 7505, Tucson, Sponsor: Dept. of Neurology. Cont Colin R. Bamford, M.D. & Jose Laguna, M.D., Dept. of Neurology, U o Health Sciences Center, Tucson, 85724. Approved for 1 required hour session toward the ArMA Certificate Continuing Medical Education.

### NEUROLOGY GRAND ROUNDS

Every Friday, 12 noon. 1st, 3rd & Fridays, U of A Health Sciences Cent, Rm. 7505. 2nd and 4th Fridays, Vetera Administration Hospital. Sponsor: U of Health Sciences Center, Dept. of Neur ogy. Contact: William A. Sibley, M.D Dept. of Neurology U of A Heal Sciences Center, Tucson, AZ 85724. A proved for 1 required hour per sessi toward the ArMA Certificate in Continui Medical Education.

### PSYCHIATRIC GRAND ROUNDS

Every Wed, Sept to May, 4-5:30 p.m. Rm 840 Arizona Medical Center, Tucson, AZ. Sponso U of A College of Medicine Dept of Psychi try Contact Alan Levenson, M.D., U of College of Medicine, Tucson, AZ 85721. A proved for 1-1/2 required hour per sessio toward the ArMA Certificate in Continui Medical Education

### TRAUMA CONFERENCE

Every Thursday, 4-5:00 p.m. Health Sc ences Center, Rm. 5505, Tucson, A Sponsor: U of A College of Medicin Dept. of Surgery. Contact: Martin Silve stein, M.D., Dept. of Surgery, U of Health Sciences Center, Tucson, A 85724. Approved for 1 required hour p session toward the ArMA Certificate Continuing Medical Education.

### STAFF EDUCATION CONFERENCE

Wednesdays, Weekly, 1 p.m. Arizona Stat Hospital, Phoenix, AZ. Sponsor Arizona Stat Hospital Contact Howard E Wulsin, M D, Ar zona State Hospital, 2500 E Van Bure Phoenix, AZ 85008 Approved for 1 require hour per session toward the ArMA Certificate i Continuing Medical Education.

### SURGICAL GRAND ROUNDS
### 4TH TUESDAY OF EACH MONTH

Hospital Auditorium, Baptist Hospital, Phoeni Sponsor Baptist Hospital Phoenix Contac James B Shields, M D., 6036 N 19th Ave Phoenix, AZ 85015. Approved for 1-1/2 re quired hours per month toward the ArMA Ce tificate in Continuing Medical Education.

### PATIENT STAFFING CONFERENCE

Three times weekly. Camelback Hospita Phoenix, AZ. Sponsor Camelback Hospita Contact. Medical Director, Camelback Hospital, 5055 N 34th St., Phoenix, AZ 85018. Approved for 1 elective hour per conferenc toward the ArMA Certificate in Continuin Medical Education.

# SOUTHWESTERN CARDIOVASCULAR SYMPOSIUM

**March 16, 17 and 18, 1978**
**Mountain Shadows Resort**
**Scottsdale, Arizona**

Sponsored by
St. Luke's Hospital Medical Center
Phoenix, Arizona

Sections of Cardiology
and
Cardiovascular Surgery

Featuring educational programs, planned voluntary activities for registrants and spouse.

FACULTY
Denton Cooley, M.D.
Houston, Texas

Dan Berman, M.D.
Los Angeles, California

Gerald Buckberg, M.D.
Los Angeles, California

James Forrester, M.D.
Los Angeles, California

John Manley, M.D.
Milwaukee, Wisconsin

John Vogel, M.D.
Santa Barbara, California

Arthur Weyman, M.D.
Indianapolis, Indiana

Registration is $125.00. Participants will receive 18 required hours credit. For more information:

Richard Mushorn, M.D., Program Chairman or Robert J. Lundin II, Director, Public Relations
St. Luke's Hospital Medical Center, 525 North 18th Street, Phoenix, Arizona 85006 • (602) 258-7373

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## WHERE DO I GO FROM HERE?

A program for continuing the education of Diabetics and their families in a four day series of classes.

**TOPICS:** What is Diabetes?
Hypoglycemia and Acidosis
Sick Day Rules
The Diabetic Diet
Medications
Complications
Hygiene and Foot Care
Research

**SCHEDULE:** October 10-13 7:30-9:30 p.m.
October 17-20 9:30-11:30 a.m.
November 7-10 7:30-9:30 p.m.
November 14-17 9:30-11:30 a.m.

**ENROLLMENT:** $5 for Text book
**contact:** ARIZONA DIABETES
ASSOCIATION
555 West Catalina Dr., Ste. 14
Phoenix, AZ 85013
Phone: 374-3514

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## Taos Medical Symposium

Announcing the Fifth Annual Symposium

February 14-18, 1978 Taos, New Mexico

14 hours CME credit applied for from AAFP and AMA
Topics covering:

Cardiology (4 hrs.)
Rheumatology (4 hrs.)
G.I. Problems (4 hrs.)
Dermatology (2 hrs.)

Additional activities with special four-day group rates scheduled at Taos Ski Valley.

Advance registration required. Registration fee of $100.00 includes continental breakfast for two each morning, transfers each day to and from the ski area, cross country ski trips, tours of local museums and art galleries, and hosted receptions. Registration deadline January 31, 1978. Limited to 100 participants.

For further information contact:
Albuquerque & Bernalillo County Medical Association
2650 Yale Blvd., SE Suite 103
Albuquerque, New Mexico 87106
Phone (505) 247-3711

### MONTHLY MEDICAL EDUCATION SEMINAR

Third Monday of the Month, 6 30 p.m., Kiva Conference Room, Phoenix Memorial Hospital Sponsor Medical Staff of Memorial Hospital. Contact George Scharf, M D., 1201 South 7th Avenue, Phoenix, AZ 85007 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### COUNTER TRANSFERENCE GROUP

Weekly, Thurs. 8-10 p.m Sponsor Phoenix Psychiatric Council Contact James E Campbell, M.D., 5051 N 34th St., Phoenix, AZ 85018. Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education

### DESERT SAMARITAN HOSPITAL

Wednesday Evenings 7 p.m. Sponsor: Desert Samaritan Hospital. Contact. L A. Rosati, M.D., Laboratory, Desert Samaritan Hospital, Mesa, AZ 85202 Approved for required hours toward the ArMA Certificate in Continuing Medical Education

### PULMONARY DISEASE GRAND ROUNDS

Mondays—12 Noon D-5 North Conference Rm., Good Samaritan Hospital, Phoenix, AZ. Sponsor Pulmonary Disease Teaching Service, Good Samaritan Hospital. Contact Bernard E Levine, M D., Pulmonary Function Laboratory, Good Samaritan Hospital, 1033 E. McDowell Hospital, Phoenix, AZ 85006. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### CLINICAL CANCER CONFERENCE

3rd Wednesday every month, Butler Bldg Conference Room, Good Samaritan Hospital, Phoenix. AZ Sponsor Good Samaritan Hospital Contact John A Bruner, M D, 926 E McDowell Road, Phoenix, AZ 85006. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### TUMOR BOARD CONFERENCE

Every Friday at Noon, Kiva Conference Room, Phoenix Memorial Hospital Sponsor Phoenix Memorial Hospital Contact Howard Kimball, M D. 333 West Thomas Road, Phoenix, AZ 85013 Approved for credit toward the ArMA Certificate in Continuing Medical Education

### MONTHLY MEDICAL EDUCATION SEMINAR

Third Monday of the Month, 6 30 p m. Kiva Conference Room Phoenix Memorial Hospital Sponsor Medical Staff of Memorial Hospital Contact George Scharf M D 1201 South 7th Avenue Phoenix AZ 85007 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### MONTLHY MEETING OF TUCSON RADIOLOGISTS

Last Tues of Month, Plaza International, Tucson, AZ Sponsor U of A Medical Center, Dept of Radiology Contact Irwin M Freundlich, M D, Arizona Medical Center, Dept of Radiology, Tucson, AZ 85724 Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education

### FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor Medical Staff. Contact. R C. Good, M D., Dir. of Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### MORBIDITY & MORALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor: Medical Staff. Contact R C. Good, M.D., Dir. Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12 45 p m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor Medical Staff. Contact R C Good, M.D., Director of Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p m., Scottsdale Memorial Hospital, Scottsdale, AZ Sponsor Medical Staff. Contact R. C. Good, M D., Dir of Medical Education, 7300 E 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### CARDIOLOGY CONFERENCE

Weekly—Friday 8-9 a.m., St Mary's Hospital Auditorium, Tucson, AZ. Sponsor St Mary's Hospital Contact A. L Forte, M.D., St Mary's Hospital, Tucson, AZ 85724 Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

### GRAND ROUNDS

Each Thursday 7 a.m.-8 a m St. Mary's Hospital and Health Center, Sponsor. Depts. of Medicine, Surgery, Radiology, Pathology and Family Practice. Contact Richard Silver, M D, Chairman, Medical Education and Library Committee, Century Medical Plaza, Suite 160, 1701 West St Mary's Road, Tucson, AZ 85703 Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education

### GI CONFERENCE

(Special Program with U of A Consultants) 4th Friday, 1 p m., T-5 Sponsor VA Hospital Phoenix Contact Jasper L McPhail, M D., VA Hospital, 7th & Indian School Rd, Phoenix, AZ Approved for required hours toward the ArMA Certificate in Continuing Medical Education

### G.I.-RADIOLOGY CLINICAL CORRELATION CONFERENCE

Each Tuesday, 1 p.m., T-5. Sponsor: VA Hospital Phoenix. Contact: Jasper L. McPhail, M D Veterans Administration Hospital, 7th & Indian School Rd, Phoenix, AZ Approved for required hours toward the ArMA Certificate in Continuing Medical Education

### GASTROENTEROLOGY CONFERENCE

1st and 3rd Tuesday, 1 p.m., T-5. Sponsor: V
Hospital Phoenix, Contact: Jasper L. McPha
M D VA Hospital, 7th & Indian School R
Phoenix, AZ. Approved for required hou
toward the ArMA Certificate in Continuin
Medical Education.

### CARDIOLOGY CONFERENCE

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tal Phoenix. Contact Jasper L. McPhail, M.
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AZ. Approved for required hours toward th
ArMA Certificate in Continuing Medical Ed
cation.

### CLINICOPATHOLOGY CONFERENCE

4th Thursday of 3rd Mo. (Mar., June., Sept.
Dec.), 1 p m., T-5. Sponsor VA Hospit
Phoenix. Contact Jasper L. McPhail, M D., V
Hospital, 7th & Indian School Rd, Phoenix, A
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Certificate in Continuing Education.

### MEDICAL-SURGICAL CHEST CONFERENCE

1st and 3rd Thursday, 1 p.m, T-5 Sponsor V
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### CANCER SYMPOSIUM (fomerly Tumor Board)

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Medical Education.

### SURGERY-PATHOLOGY CONFERENCE

Each Thursday, 7 a m, 2128 Sponsor V
Hospital Phoenix. Contact Jasper L. McPha
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Phoenix, AZ Approved for required hour
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Medical Education.

### DERMATOLOGY CONFERENCE

1st, 2nd & 3rd Wednesday Sponsor VA Ho
pital Phoenix Contact Jasper L McPhail, M
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AZ Approved for required hours toward th
ArMA Certificate in Continuing Medical Ed
cation

### MEDICAL SERVICE GRAND ROUNDS

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### HEPATOLOGY CONFERENCE

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Wednesday 8:30 a.m. -D512. Sponsor Hospital Phoenix. Contact: Jasper L. Phail, M.D., VA Hospital, 7th Ave. & lian School Rd., Phoenix. Approved for quired hours toward the ArMA Certifi- te in Continuing Medical Education.

**EDICAL SURGICAL G.I. CONFERENCE**

& 3rd Friday - 2 p.m. -2128 Sponsor: Hospital, Phoenix. Contact: Jasper L. Phail, M.D., VA Hospital, 7th Ave. & lian School Rd., Phoenix. Approved for quired hours toward the ArMA Certifi- te in Continuing Medical Education.

**L PROFESSIONAL RESERVE NFERENCE**

Sunday, 10 a.m., US Army Reserve nter, 6201 E. Oak, Phoenix, AZ. Sponsor VA Hospital Phoenix. Contact: Jasper McPhail, M.D., VA Hospital, 7th Ave. & lian School Rd., Phoenix. Approved for quired hours toward the ArMA Certifi- te in Continuing Medical Education.

# AMA Acts to Strengthen Medical Discipline

A report by the AMA Ad Hoc Committee of Medical Discipline, summarizing the current status of medical discipline in the United States and containing six recommendations for improvements, was adopted at the AMA Clinical Convention in December. Among the recommendations were: increased education in ethics at all levels in medical schools; state medical association participation in reviewing and improving licensure and disciplinary mechanisms; participation by medical leaders in developing effective programs to review the quality of physician-provided care

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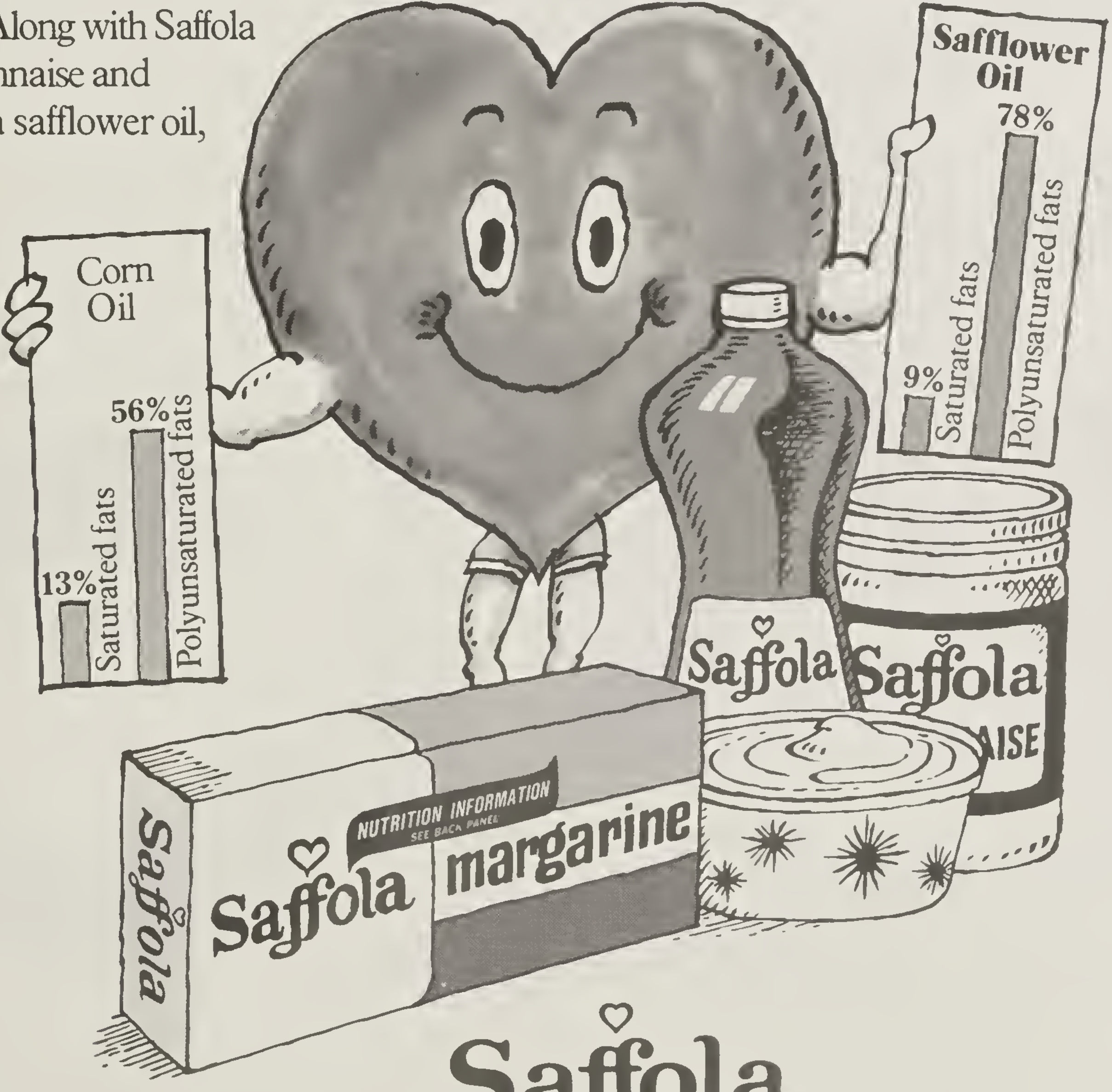

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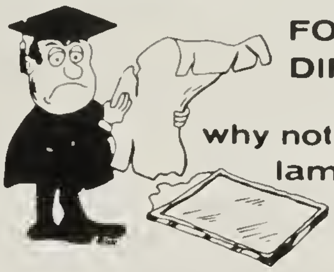

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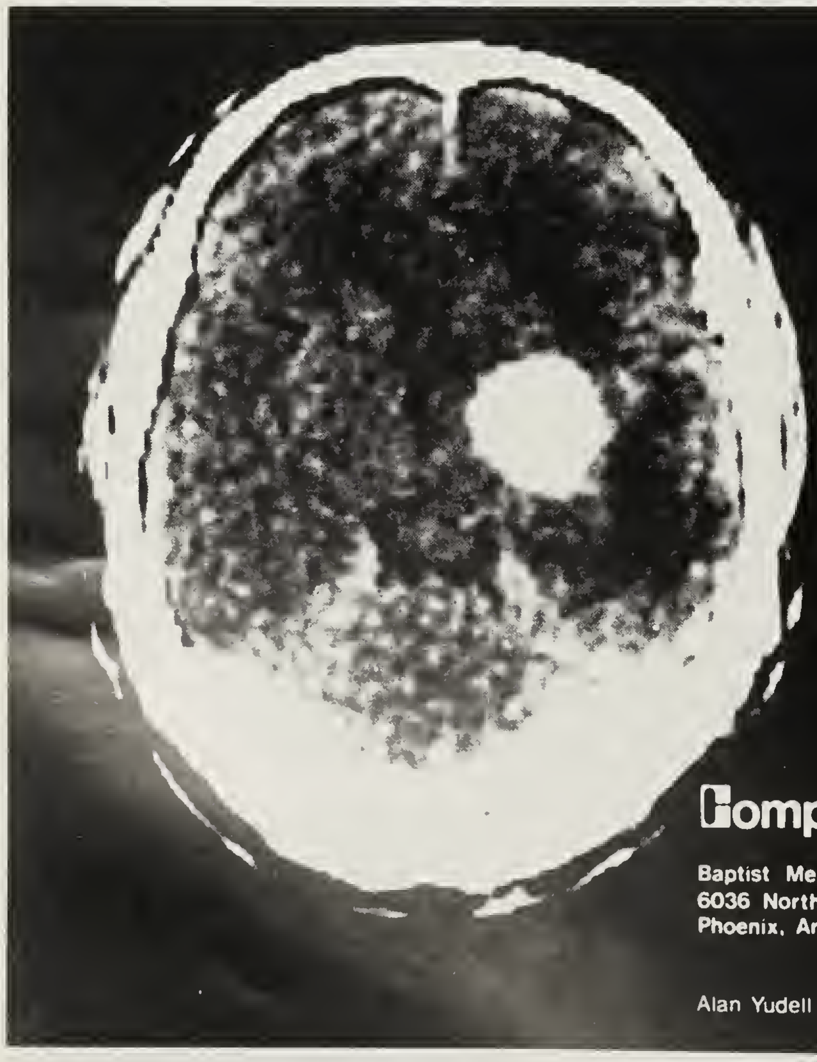

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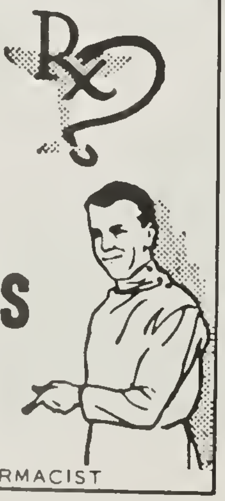

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Valium (diazepam) is a benzodiazepine with a character all its own. Pharmacologically, it has been described as more potent mg-per-mg than other available anxiolytic benzodiazepines. Pharmacokinetically, only Valium provides active *diazepam* as well as the active metabolites 3-hydroxydiazepam, desmethyldiazepam and oxazepam.

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Another important aspect of the clinical character of Valium is safety. Though drowsiness, ataxia and fatigue are possible, these and more serious side effects are rarely a problem. Of course, as with all CNS-acting drugs, patients taking Valium should be cautioned against driving, operating dangerous machinery or the simultaneous ingestion of alcohol.

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**a prudent choice in psychic tension and anxiety**

**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy).

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

***Usage in Pregnancy:*** **Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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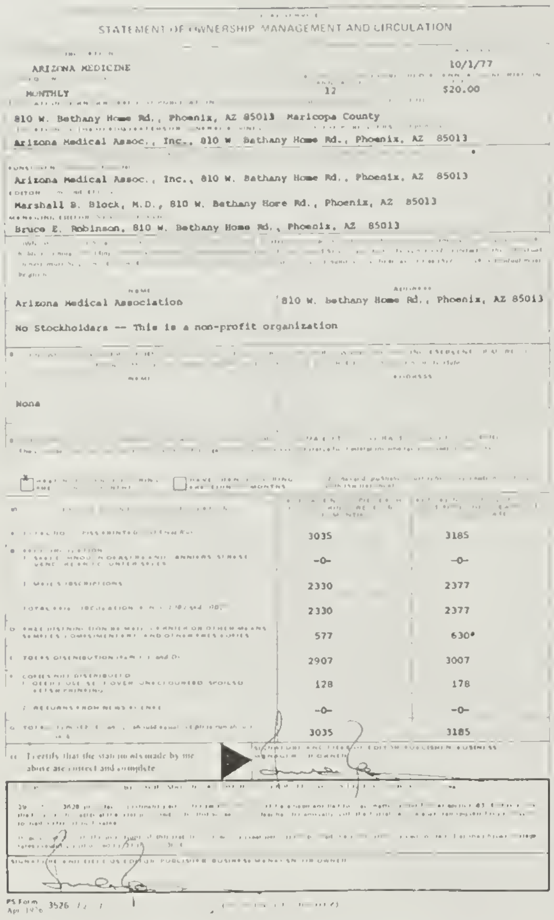

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1. For the relief of symptoms associated with cerebral vascular insufficiency.
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Final classification of the less-than-effective indications requires further investigation.

**Composition:** Vasodilan tablets, isoxsuprine HCl, 10 mg. and 20 mg.
Vasodilan injection, isoxsuprine HCl, 5 mg., per ml.

**Dosage and Administration:** Oral: 10 to 20 mg., three or four times daily. Intramuscular: 5 to 10 mg. (1 or 2 ml.) two or three times daily. Intramuscular administration may be used initially in severe or acute conditions.
**Contraindications and Cautions:** There are no known contraindications to oral use when administered in recommended doses. Should not be given immediately postpartum or in the presence of arterial bleeding.
Parenteral administration is not recommended in the presence of hypotension or tachycardia.
Intravenous administration should not be given because of increased likelihood of side effects.
**Adverse Reactions:** On rare occasions oral administration of the drug has been associated in time with the occurrence of hypotension, tachycardia, nausea, vomiting, dizziness, abdominal distress, and severe rash. If rash appears the drug should be discontinued.
Although available evidence suggests a temporal association of these reactions with isoxsuprine, a causal relationship can be neither confirmed nor refuted.
Administration of single dose of 10 mg. intramuscularly may result in hypotension and tachycardia. These symptoms are more pronounced in higher doses. For these reasons single intramuscular doses exceeding 10 mg. are not recommended. Repeated administration of 5 to 10 mg. intramuscularly at suitable intervals may be employed.
**Supplied:** Tablets, 10 mg., bottles of 100, 1000, 5000 and Unit Dose; Tablets, 20 mg., bottles of 100, 500, 1000, 5000 and Unit Dose; Injection, 10 mg. per 2 ml. ampul, box of six 2 ml. ampuls. U.S. Pat. No. 3,056,836

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Each tablet contains 180 mg anhydrous theophylline (90 mg in the immediate release layer and 90 mg in the sustained release layer), 48 mg ephedrine hydrochloride (16 mg in the immediate release layer and 32 mg in the sustained release layer), and 25 mg phenobarbital in the immediate release layer

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**Indications.** Tedral, Tedral SA, and Tedral Elixir are indicated for the symptomatic relief of bronchial asthma, asthmatic bronchitis, and other bronchospastic disorders. They may also be used prophylactically to abort or minimize asthmatic attacks and are of value in managing occasional, seasonal or perennial asthma.

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Tedral Elixir is convenient for persons who may have difficulty in swallowing tablets.

These Tedral formulations are adjuncts in the total management of the asthmatic patient. Acute or severe asthmatic attacks may necessitate supplemental therapy with other drugs by inhalation or other parenteral routes.

**Contraindications.** Sensitivity to any of the ingredients; porphyria.

**Warnings.** Drowsiness may occur. PHENOBARBITAL MAY BE HABIT-FORMING.

**Precautions.** Use with caution in the presence of cardiovascular disease, severe hypertension, hyperthyroidism, prostatic hypertrophy, or glaucoma.

**Adverse Reactions.** Mild epigastric distress, palpitation, tremulousness, insomnia, difficulty of micturition, and CNS stimulation have been reported.

**Average Dosage.** *Prophylactic or Therapeutic.*

Tedral: *Adults*—One or two tablets every 4 hours. *Children*—(Over 60 lb) one-half the adult dose.

Tedral SA: *Adults*—One tablet on arising and one tablet 12 hours later. Tablets should not be chewed. *Children*—Not established for children under 12.

Tedral Elixir: Note: One teaspoonful is equivalent to *one-quarter* Tedral tablet. *Children*—One teaspoonful per 30 lb body weight, every 4-6 hours, unless prescribed otherwise by physician. Should be given to children under 2 years of age only with extreme caution. *Adults*—One to two tablespoonfuls every four hours.

**Supplied.** Tedral: White, uncoated scored tablets in bottles of 24 (N 0047-0230-24), 100 (N 0047-0230-51) and 1000 (N 0047-0230-60). Also in Unit Dose—package of 10 x 10 strips (N 0017-0230-11).

Tedral SA: Double-layered, uncoated, coral/mottled white tablets in bottles of 100 (N 0047-0231-51) and 1000 (N 0047-0231-60). Also in Unit Dose—package of 10 x 10 strips (N 0047-0231-11).

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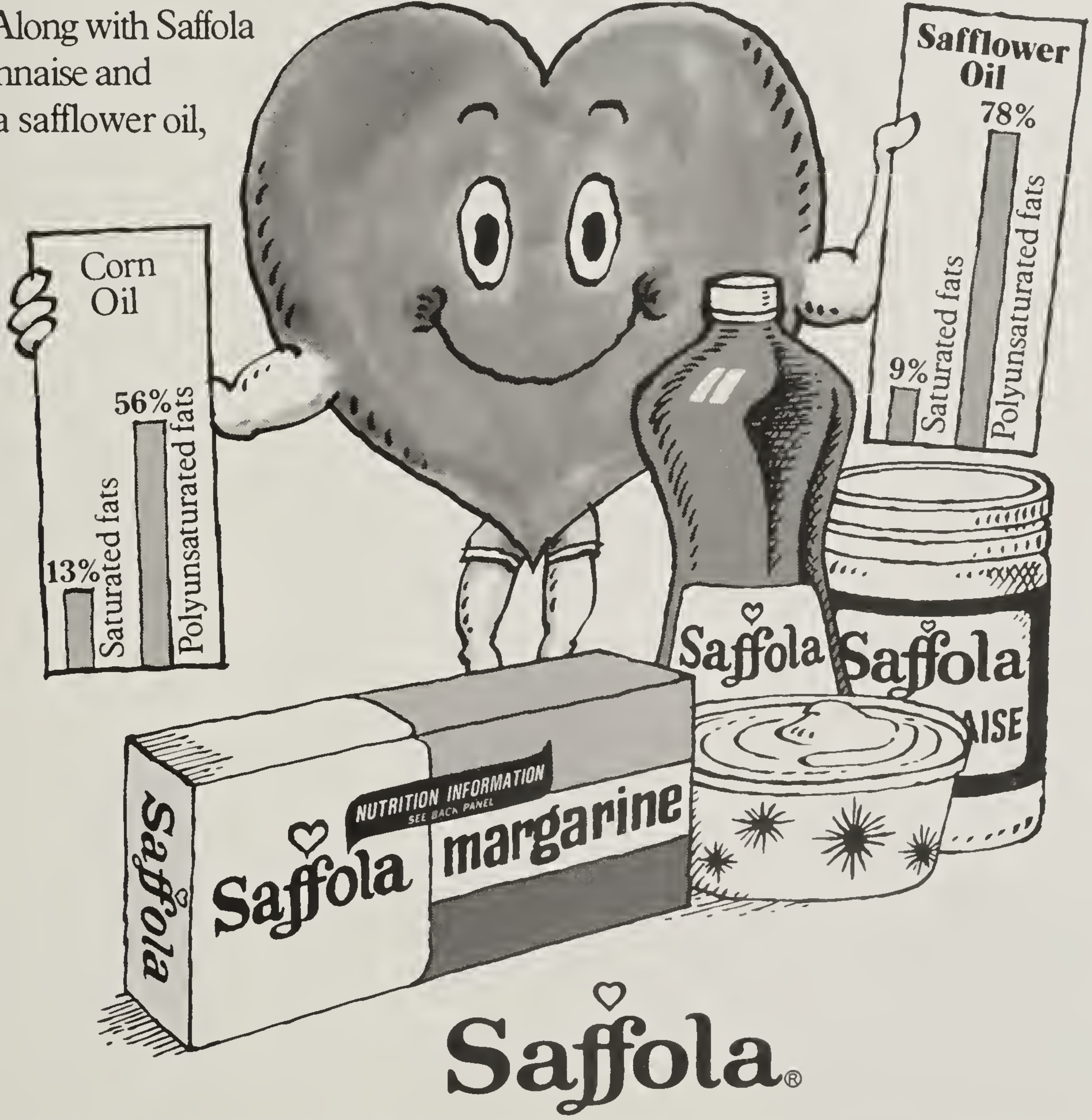

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References:
*National Disease & Therapeutic Index, Jan.-Dec., 1976 IMS America Ltd., Ambler, Pa 1976.
†Amer Med Assn., Dept of Drugs, A M A Drug Evaluations, 2nd Edition, Publishing Sciences Group, Inc., Acton, Mass., 1973, pp 482-3

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### 5 mg, 10 mg, 25 mg capsules

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**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** Relief of anxiety and tension occurring alone or accompanying various disease states.

**Contraindications:** Patients with known hypersensitivity to the drug.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported.

***Usage in Pregnancy:*** **Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

**Precautions:** In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

**Adverse Reactions:** Drowsiness, ataxia and confusion may occur, especially in th elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported Also encountered are isolated instances c skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fas activity) may appear during and after treat ment; blood dyscrasias (including agranu locytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

**Usual Daily Dosage:** Individualize for maximum beneficial effects. *Oral—Adults:* Mild and moderate anxiety and tension, 5 or 10 mg *t.i.d.* or *q.i.d.*; severe states, 20 or 25 mg *t.i.d.* or *q.i.d. Geriatric patients:* 5 mg *b.i.d.* to *q.i.d.* (See Precautions.)

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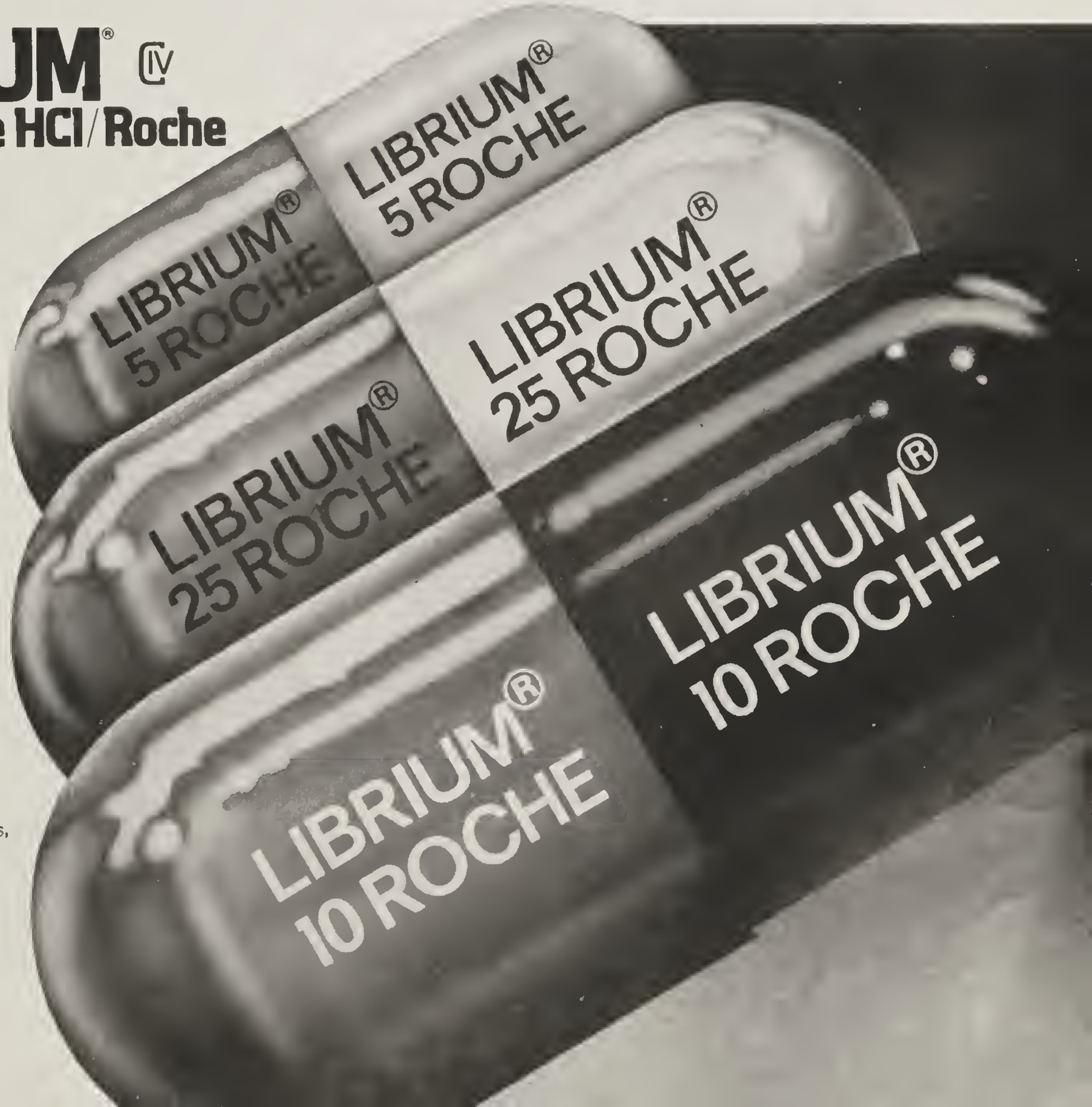

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Seminars in Chest Medicine

# Smoke Inhalation

Russell R. Dodge, M.D.

Editors:
Robert J. Clark, M.D.
Lynn M. Taussig, M.D.
William C. Weese, M.D.

Two major fires, the Cleveland Clinic fire of 1929 and the Coconut Grove fire of 1941, brought the term smoke inhalation into the medical literature. Prior to these tragic events, it was generally believed that direct burn injuries were responsible for nearly all fire fatalities. In these two disasters it was observed that many persons died of respiratory failure with only minor burn injuries.

Authors now agree that at least fifty percent of deaths that occur in fires are caused by smoke inhalation [1,3] Figure 1 is adapted from an article by P.C. Bowes which documents the four fold rise in smoke inhalation deaths in Great Britain over the past sixteen years. What accounts for this increase? Certainly greater awareness of the problem is one factor, but the changes that have occured in building materials which are burning in fires may also be contributing to this increase in inhalation deaths.

Figure 1 - Smoke Inhalation Fire Deaths
and Total Fire Deaths in England

Adapted from Bowes, P.C.: Smoke and Toxicity Hazards of Plastics in Fires Ann. Occup. Hyg 17: 143, 1974.

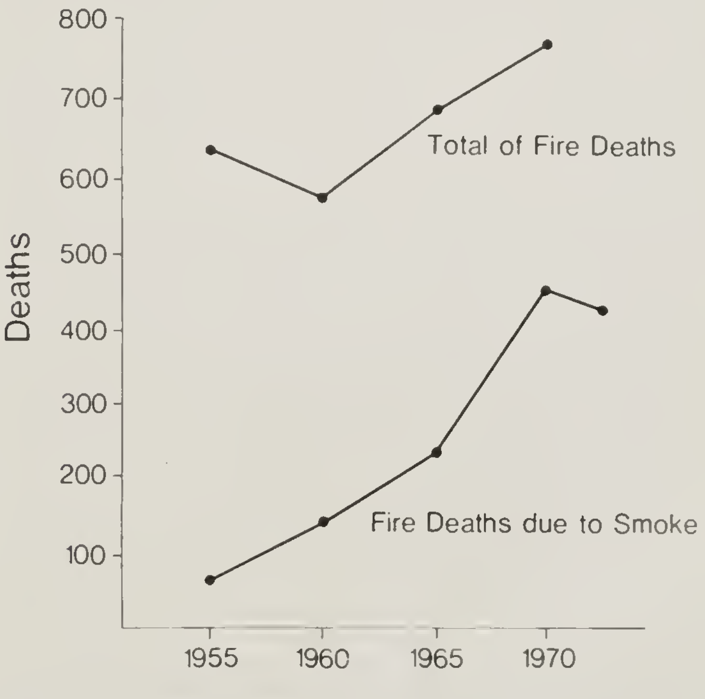

**Figure 1 — Smoke Inhalation Fire Deaths and Total Fire Deaths in England**
**Adapted from Bowes, P.C.: Smoke and Toxicity Hazards of Plastics in Fires. Ann. Occup. Hyg. 17: 143, 1974.**

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From: The University of Arizona College of Medicine (Westend Laboratories), Tucson, Arizona

Smoke is a suspension of small particles in heated gases. The particles are carbon, and they are often coated with organic acids and aldehydes. Most of these particles are too large to reach the lung parenchyma and are deposited in the upper airway.

The gases found in smoke vary depending on the material burning, the amount of oxygen present, and the temperature achieved. Carbon monoxide and carbon dioxide are always produced at fires. These gases can produce adverse health effects because of their systemic toxicity. Hydrogen cyanide, a product of the combustion of some nitrogen-containing materials, is also a systemic toxin.

Other gases which can cause adverse health effects do so within the respiratory tract and are labeled respiratory irritants. Among these are chlorine, phosgene, nitrogen dioxide, sulfur dioxide, ammonia, and hydrogen chloride. These gases are found at fires because of either the combustion process or leakage from damaged industrial equipment. The site of action of these gases depends on their solubility. Soluble gases, such as ammonia, react with the water present in the eyes and mucous membranes to produce immediate irritating symptoms. Relatively insoluble gases, like phosgene, do not affect these structures and pass into the lungs where they may slowly react with the alveolar-capillary membrane.

All smoke, no matter what the source, produces certain hazards. For example, smoke replaces oxygen. If a fire occurs in an enclosed space, fire victims may suffer the effects of hypoxemia. Smoke also impedes vision, making escape more difficult and burn injury more likely. Both the opacity and irritating effects of smoke can affect vision. Thirdly, smoke is usually very hot. A person exposed to a temperature of 150°C will lose consciousness and die within several minutes. Fires in buildings can reach this temperature in five minutes. Fires in airplanes can do so in ninety seconds.[4]

Hot smoke is rarely capable of producing direct injury to the respiratory tract below the larynx. Gases have a very low specific heat and the upper airway has excellent heat exchanging properties. Upper airway obstruction, however, can occur secondary to direct damage, and this event is an occasional cause of death in fire victims. Steam, with its great heat-carrying capacity, can produce lower respiratory tract damage.

Eighty-five to ninety percent of all fire casualties occur within closed structures. Before World War II, the combustible materials used in the construction and furnishing of buildings were primarily wood and wood products. The chief toxic gases produced by combination of these materials are carbon monoxide and the aldehydes.

Carbon monoxide has two undesirable effects in human beings which can lead to asphyxia: it binds to hemoglobin with much more affinity than does oxygen to block oxygen transport; its presence in blood shifts the oxygen dissociation curve to the left to impai movement of oxygen from the blood to the periphera tissues.

The decrease in delivery of oxygen to the periphera tissues, if progressive, causes deterioration in nervou system function; culminating in convulsions, coma and death. A correctable systemic effect, lacti acidosis, has also been described in fire victims wit carboxyhemoglobin levels of thirteen to thirty-seve percent.[5]

Respiratory irritants are produced in wood fires Carbon particles are coated with insoluable aldehyde such as acrolein. These compounds affect the alveolar cappillary membrane by denaturing protein and ar the major cause of pulmonary edema among person exposed to wood fires.

Other respiratory irritants include the oxides o nitrogen. These gases are produced where nitrogen containing materials are burned and are relativel insoluble. The property of insolubility allows thes gases to penetrate to the alveolar level. Initially afte exposure, patients may be asymptomatic or complai of chest tightness and a dry cough. Pulmonary edem can occur up to thirty-six hours after exposure Several weeks after exposure, patients who hav recovered from pulmonary edema, as well as peopl who have been asymptomatic, may develop shortnes of breath and fine miliary opacities on chest x-ray Lung biopsy reveals bronchiolitis fibrosis obliterans an irreversible disorder of small airways.

Another insoluble gas which can cause lowe respiratory tract injury is phosgene. This gas is use in the production of aniline dyes and also released a fires where chlorinated hydrocarbons, used as chlorinators in industry, are decomposing. Phosgene react with water to produce hydrochloric acid. This occur in the lung alveoli and pulmonary edema ensues. A with nitrogen dioxide exposure, the victim may b asymptomatic for several hours after his exposure.

Ammonia is an example of a very soluble gas; th problems it produces are very different than those o the nitrogen oxides or phosgene. Ammonia is used i refrigeration, production of fertilizers, oil refining, an in the making of plastics. Most exposures result fron damaged tanks or pipes. The exposed person i immediately affected. Irritation of the eyes, mouth and throat occur. The voice is lost and strido develops. Death secondary to upper airway obstruction can occur.

Other soluble, irritating gases that can be found i smoke include sulfur dioxide and chlorine. Sulfu dioxide is a heavy, pungent gas that frequently i produced in fires involving rubber. When this ga contacts water, sulfurous acid ($H_2SO_3$) results. A with ammonia, its high solubility makes it ver irritating to the eyes and throat. Chlorine, lik ammonia, usually is present in fires because of leaks i storage equipment. It is a dense, yellowish-green ga hat has a solubility between ammonia and phosgene. Vhile it is irritating to mucous membranes, it can ffect the entire respiratory tract. Both acute bronhitis and pulmonary edema can occur. Some long-erm studies have demonstrated permanent obstrucve changes in lung function, but the data are onflicting.

Since World War II the materials used in the onstruction and furnishing of buildings have changed, ne major change being the incorporation of plastics nto these products. Although the rise in smoke nhalation deaths appears to parallel the rise in the use f plastics in construction, this phenomenon has not een well documented. Several spectacular fires nvolving plastics materials have focused attention on hese compounds.

In January of 1967, three astronauts died in a fire in n Apollo spacecraft. They were not burned, but uffered smoke inhalation secondary to the smoldering f plastics materials. In 1973, 124 persons died in a Boeing 707 in France. After the plane commenced its pproach into Paris, a small fire broke out in an aft oilet. Although a successful emergency landing was nade, only one passenger was evacuated, the others ied of smoke inhalation.

Plastics are, by definition, materials that can be nolded. The four most common plastics produced in his country during the last several years are polytyrene, polyethyene, polypropyene, and polyvinyl hloride.[6] Polyvinyl chloride produces the most erious smoke inhalation problems.

Polyvinyl chloride is widely used in the construction f homes, furnishings, office equipment, electrical vire, telephone and cable coverings, and in motor ehicles. It decomposes to produce high temperatures, hick smoke, and large amounts of hydrogen chloride gas. Hydrochloric acid is soluble, which leads to eye nd mucous membrane irritation at a concentration of pproximately fifteen parts per million. It also gains ccess to the alveoli via the soot aerosol and can cause ulmonary edema. A recent report describes a fireman vho was exposed to decomposing polyvinyl chloride in copying machine fire. Although he had no symptoms ollowing the exposure, he died suddenly twenty-four ours later. Autopsy revealed pulmonary edema.

Polyvinyl chloride, along with many other plastics, nay decompose when heated and release toxic gases vithout bursting into flames in a process known as yrolysis. This characteristic makes it important to dvise firemen to avoid the smoke of plastics fires ven during clean up operations after the flames have een extinguished.

Because of the variety of agents responsible for espiratory tract injury among fire victims, treatment f smoke inhalation must be individualized. Fire ictims with facial burns, singled nasal hairs, black putum, high carboxyhemoglobin levels, or a history f being within an enclosed space should be observed closely for six to twelve hours, keeping in mind the latency period associated with inhalation of insoluble gases. In general, persons destined for serious respiratory problems will develop an alveolar-arterial gradient of greater than 20mm Hg within this period. Recently, lung scanning has been advocated as a method to detect asymptomatic persons who will become ill.[7] The study, however, does not clearly show the test to be an improvement over an arterial blood gas determination, carboxyhemoglobin measurement and chest x-ray.

Victims of soluble gas exposure should undergo laryngoscopy and be observed for signs of airway obstruction. Those exposed to insoluble gases may develop a wide spectrum of pulmonary problems, including acute bronchitis, pulmonary edema, and adult respiratory distress syndrome. These problems must be treated as they develop; the principle being to support the patient while the respiratory tract heals.

Once the acute lung injury has subsided, permanent changes in lung structure and function may remain. Nitrogen dioxide clearly can produce residual damage. The problem has not been well-studied with most of the other toxic gases. There is some evidence that chronic fire-fighting leads to an increased rate of decline in lung function among firemen, although at least one group of investigators could not confirm that observation.[8,9]

In summary, smoke inhalation is a complex and growing problem. Different clinical syndromes from acute upper airway obstruction to adult respiratory distress syndrome may develop in victims, depending on the materials in the fire. Lower respiratory tract injury more commonly develops among persons exposed to the insoluble toxic gases, and asymptomatic individuals exposed to these gases must be observed carefully for several hours. The therapy of smoke inhalation is basically supportive. Further studies will be needed to define how much residual disease is produced by smoke inhalation, both chronic and acute.

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# Drug Therapy Problems

Robert Pearson, R.Ph.

## Salt Substitute = Low Cost Potassium

A brief review of the chemical content and of the costs (in terms of potassium) of eight commercially-available salt substitutes is presented. The authors also report their findings regarding the bitterness, saltiness, and general overall preference among these eight products by a group of 28 hypertensive patients. The data are presented in tabular form. The authors do not attempt to reach definite conclusions about the eight products, but present the data to allow for individual reader choice. The authors do, however, note that the cost difference between the salt substitutes and the available potassium chloride supplements may vary by a factor of 10-12 in favor of the salt substitutes.

Sopko, J. A., and Freeman, R. M. (Department of Internal Medicine, University Hospital, Iowa City, IO 52242): Salt Substitutes as a Source of Potassium, *JAMA* 238:608-610, 1977.

## Betadine Yields False Positive Potassium Levels

This investigation reports the effect of povidone-iodine on potassium levels. Two methods were used: 1) povidone-iodine was added to a blood sample drawn from the antecubital vein and analyzed via 4-channel AutoAnalyzer II (flame detection), and also via SMAC (ion-selective electrode), and 2) povidone-iodine was used to disinfect a skin area from which a skin-puncture blood was taken and analyzed as above. Results according to analysis method were as follows: 1) AutoAnalyzer; reference 4.0mmol/liter, skin puncture 5.1mmol/liter, and drawn blood with povidone-iodine added 5.7mmol/liter and 2) SMAC: reference 4.1mmol/liter, skin puncture 5.1mmol/liter, and drawn blood with povidone-iodine added 4.9mmol/liter. The authors recommend not using povidone-iodine when skin puncture blood is drawn for analysis.

VanStierteghem, A. C., and Young, D. W.: Povidone-Iodine ("Betadine") Disinfectant as a Source of Error, *Clin Chem* 23: 1512, 1977.

## Laetrile Poisoning

One to five 500mg amygdalin tablets were ingested accidentally by an 11-month-old girl. One hour after ingestion, she was in shock with irregular respirations and acidosis. Upon transfer to the reporting hospital, a cyanide level of 29 ug/dl was found. Fourteen hours post-ingestion, respiratory arrest occurred (cyanide was not detected in blood at this time). Death occurred 72 hours following ingestion.

Humbert, J. R. (The Childrens Hospital of Buffalo, Buffalo, NY) Tress, J. H., and Braico, K. T.: Fatal Cyanide Poisoning: Accidental Ingestion of Amygdalin, *JAMA* 238: 482, 1977.

## Topical Thrombin Decreases Surgical Wound Hematoma

Forty-five consecutive patients undergoing elective abdominal surgery were allocated to three groups to study the effect of topical thrombin in the management of wound hematoma. All patients received prophylactic doses of heparin. The three groups were allocated treatment of (1) thrombin irrigation just prior to closure, (2) "thrombin diluent" irrigation just prior to closure, or (3) no irrigation. Wound hematoma developed in 3/15 patients who received thrombin irrigation, and 12/15 in the other two groups. The authors are extending their work to consider other surgical wounds.

Jasani, B., Donaldson, L. J., Baxter-Smith, D. C., Selvam, A., and Sokhi, G. S. (Department of Surgery, East Birmingham Hospital, Birmingham B9 5ST, England): Topical Thrombin and Control of Wound Hematoma, *Lancet* 2: 332-333, 1977.

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Address all communications to the author Mr Pearson is Education Research Associate with David Wastchak & Associates, Inc , Pharmaceutical Consultants, 1818 Grand Avenue, Phoenix, Arizona 85007 (602) 253-9323

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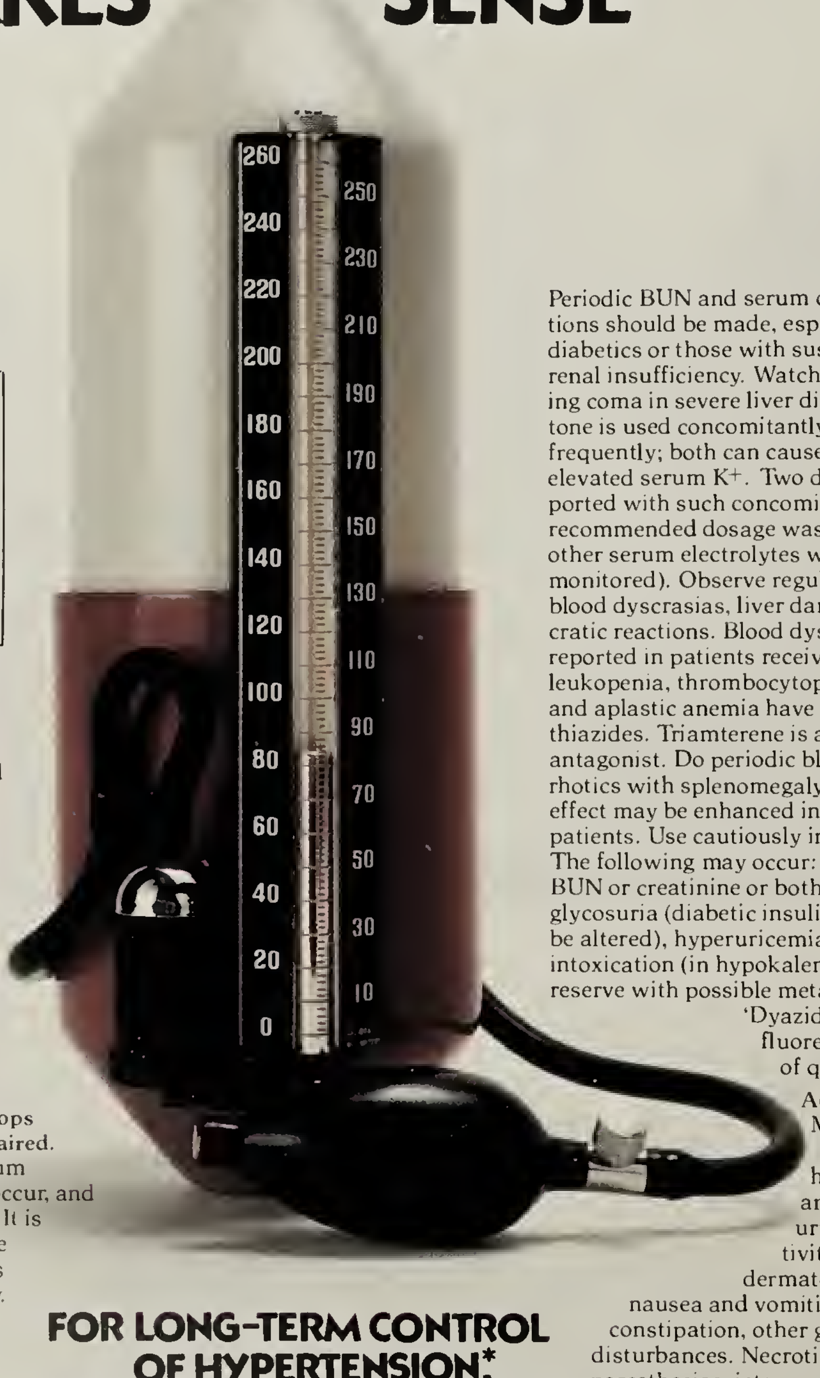

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**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum $K^+$ frequently; both can cause $K^+$ retention and elevated serum $K^+$. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine.

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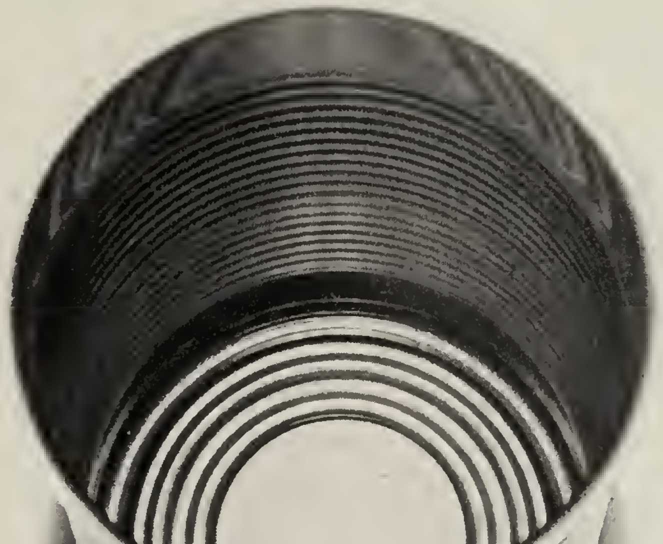

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# What Is Neurotic

Melvin Rockowitz, Ph.D.

The word 'neurotic' is often used by many to ndicate a variety of conditions ranging from psychosis ) common everyday tension and occasional nervousess. The term was first made popular by Freud who iewed neuroses as pervasive anxiety and unresolved hildhood conflicts that had continued into adulthood. Ie suggested a variety of manifestations of this nxiety and the individual's attempts to erect means f coping with the widespread deleterious effects of it. 'he former he termed 'neuroses' and the latter, he iewed as defenses. All neurotic behavior, therefore, e visualized as childhood-based in origin and ttempts to manage the anxiety that was a direct esult of the continued presence of childhood conflicts.

The practice of medicine often involves the witnessng of neurotic behavior in many patients. Often, such ehavior is difficult to define as pathological or signals f underlying psychopathology. Much of this behavior s subtle and not easily discernible, especially, if one's rimary focus is on a patient's physical symptoms. 'onsequently, I have prepared a list of characteristics f neurotic behavior which, I hope, will enable the racticing physician to magnify some of the aforenentioned subtleties. They are as follows:

1) **No lesions of the Central Nervous System** — 'his, I believe, speaks for itself and involves the bsence of any neurological trauma. It goes without aying that sometimes behavior emanating from neuological trauma can resemble psychopathological ehavior.

2) **Presence of bodily disturbances with no disernible physical base** — This includes the catagories nown as psychosomatic disorders and hypochondriais. Such symptomatology is often the basis for severe eurotic manifestations which are obscured by the hysical symptoms.

3) **No gross distortions of reality** — This involves the absence of any bizarre reactions which appear greatly discordant with realistic reactions and good judgement. This is to be differentiated from what is commonly known as 'overreaction' which has some basis in reality and is quite characteristic of neurotic behavior.

4) **Minor distortions of self-image** — This involves some difficulty in a person's ability to assess oneself realistically. It does not become a pervasive characteristic but, instead, is characterized by areas of one's self-perception that do not correspond to the way others generally view the individual. One consequence of this is lowered self-esteem and an individual's tendency to either devalue himself or inflate himself (herself) unrealistically. Again, the presence of such distortions is likely to be manifested in overreactive or unreasonable behavior. Mood swings are also likely to accompany such distortions.

5) **Inability to distinguish between aggression and assertion** — This involves the feeling that assertions are acts of aggression and destructiveness which yield a great deal of guilt-ridden, passive, and resentful feelings and behavior. The individual cannot accurately determine what his (or her) feelings and needs are from moment to moment and can lead to explosive declarations of position as the need to assert becomes more urgent. The individual's assessments of other's assertions are also likely to be confused as aggression so that hurt, envy, withdrawal and misinterpretations of communication are also quite likely.

6) **Presence of work difficulties** — This also involves difficulties in participating in group experiences in which the individual can use groups to gain self-fulfillment, as well as, share with a group to help other members with theirs. Work is often viewed as a sphere of life filled with little satisfaction and meaning.

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Patterns of job mobility and dissatisfaction can often be a manifestation. Relatedness to fellow workers is shallow and often tends to be short-lived and erratic. Disenchantment and feelings of disappointment often pervade the individual's work experience and complaints do not seem reality-based.

7) **Diminished capacity to enjoy play** — The individual gets little pleasure from recreation, interaction with peers and friends, and vacations. There is little or reduced pleasure and ability to relax. There is less ability to create ways of securing pleasure. All roads in this regard lead to frustration and general emptiness. Those areas acknowledged as fun seem to have lost some of their attractiveness and usefulness.

8) **Sexual disturbances** — Includes the inability or diminished capacity to enjoy sex and to gain fulfillment and satisfaction from it. Sex can be viewed as a biological and psychological exercise rather than a fulfiller of needs. Difficulties in responsiveness and sharing of feeling and concern often characterize such disturbances. Both partner and self consistently feel dissatisfied and isolated. Also, there is a diminished capability to experiment and to accept the limitations and needs of one's partner. Experimentation and change do not lead to expanded fulfillment.

9) **Disturbances in interpersonal relationships** — There is difficulty in the ability to form and maintain intimate relationships. Interactions with others are likely to be short-lived, unfilling, often disappointing, and lead to feelings of isolation and desire to avoid others. This is particularly true within the family context where interpersonal difficulties are often clearly reflected. People are viewed in terms of their need-gratifying potential, primarily, rather than one's experience and desire to relate in a mutually fulfilling interaction. There is a relative absence of mutuality or ability to feel empathy and sympathy. All attempts to change the quality of relationships seem to fail or be limited. Effective communication appears hard to establish, often impossible.

Most neurotics have difficulties in virtually all or most of the areas cited above. However, difficulties in only one or two of the above areas does not exclude the basis for a diagnosis of neuroses. Generally, further exploration and honest communication reveals difficulties in most, if not all, of the rest. The desirability of verbal exploration with one's patients often leads to a greater awareness of more areas of dysfunction and, hence, to more effective and appropriate treatment. Again, as in my previous article, "What is Normal?" (*Arizona Medicine*, July, 1977), some of the terms used appear vague and relative. As before, the limitations of describing behavior includes the use of such terms. Familiarity with one's patient and their history and what is normal for them helps objectify some of these terms.

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*Seminars in Endocrinology*
*and Metabolism*

# Not All Cholesterol Is Bad

Stephen E. Dippe, M.D., F.A.C.P.

**For a contrasting viewpoint**
**See page 782**

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Over the past few years elevated cholesterol level have become synonymous with accelerated hear disease. It's quite obvious that an elevated cholestero level is a highly significant risk factor in heart disease Besides cholesterol, smoking cigarettes and hypertension are the other major risk factors.

Cholesterol is found in all classes of lipoproteins The two classes which contain the greatest concentration of cholesterol are the low density lipoprotein (LDL) and the high density lipoproteins (HDL) Cholesterol is also found in the very low density lipoproteins (VLDL) and chylomicrons. The last tw lipoproteins functions as transporters of triglyceride This paper is going to concentrate on the cholestero that is located in the low density lipoproteins (LDI cholesterol) and the high density lipoproteins (HDI cholesterol). Fifty percent of the LDL is made up o cholesterol and 20% of the HDL is cholesterol Chylomicrons and VLDL are only 5% and 12% cholesterol, respectively.

Cholesterol levels measured in the laborator represent total cholesterol and the same is also true fo triglyceride levels. However, it is the role that th lipoproteins play that affects the degree of atherosclerosis, not the cholesterol level itself. The lov density lipoproteins influence cellular symphysis o cholesterol.[1] That is, cholesterol symphysis is controlled by the availability of cholesterol to the cel transported there by low density lipoprotein. Ir

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netic cases of elevated low density lipoproteins, re is a defect in the receptor sites for low density oproteins causing accelerated cellular cholesterol nphysis. Conversely, high density lipoproteins pear to have a predominant role in removing olesterol from tissues.[2] Thus, you can see that total olesterol itself is of less importance than the type of olesterol that is elevated.

Miller & Miller[3] brought to our attention the ationship between low levels of high density oproteins and accelerated atherosclerotic heart ease. Since that publication, there have been a mber of substantiating articles which indicate that gh levels of HDL cholesterol really protect against onary artery disease and conversely, it is postulat- that high levels of LDL cholesterol are detrimental the coronary arteries.

However, we will concentrate more on the evidence ich indicates that HDL cholesterol is actually otective. In a study from Sweden[4] men with myo- dial infarctions had lower levels of high density oproteins than healthy controls. A population study m Norway[5] postulated that one of the reasons why nales have a lower incidence of heart disease is cause their absolute level of HDL cholesterol is gher than in males. Actually this information about level of high density lipoproteins being greater in nales has been known for quite sometime. In this dy there was no relationship between the level of DL cholesterol and the level of physical activity, arette smoking and the level of total cholesterol. In t, this study again demonstrated the all too familiar ing serum cholesterol level with age, but showed le or no elevation of HDL cholesterol with age. us, the bulk of the rising cholesterol level is LDL olesterol. Castelli, et al[6] examined the HDL levels whites, Blacks and Japanese. His study included onolulu, San Francisco, Evans County in Georgia, bany as well as Framingham. In each group, the gh level of HDL cholesterol appeared to be otective as far as coronary artery disease. It was o of interest that when triglyceride levels were mpared to the high density lipoprotein, it was parent that triglyceride levels themselves are very ak predictors of coronary artery disease. In fact, ose with low levels of HDL cholesterol and low els of triglyceride had similar coronary heart sease prevalence rates as those with high levels of glycerides and low levels of HDL cholesterol.

An extensive study[7] of many kindreds with genetic vations of high density lipoproteins seemed to licate longer survival. The life expectancy at age 35 the time of the study for the average U.S. white le was 70.7 years and the estimated life expectancy males with hyperalpha liporprotein which would an elevated HDL cholesterol was 75.5 years. mparably in females, the increase was from 75.0 ars to 81.4 years. This is a significant difference and is thought to be the result of the reduction in coronary artery disease. Conversely, they looked at a number of kindred who had hypobeta lipoproteinemia which in terms of cholesterol would mean reduced levels of LDL cholesterol, and they had a pronounced increase in life expectancy from again 70.7 years in males to 79.0 years and in females from 75.0 years to 87.3 years.

In a recent prospective study[8] the incidence of coronary artery disease was clearly related to the level of HDL cholesterol. This gradient of the risk of coronary heart disease by the level of HDL cholesterol was there for both men and women. However, for each level of HDL cholesterol the incidence of coronary artery disease was lower for women. In this study the mean level of HDL cholesterol was 45.7 mg/100 ml. for men and 56.9 mg/100 ml. for women, ages 60-69. Persons with HDL cholesterol levels below 35 mg/100ml. had an incidence rate of coronary artery disease more than 8 times that in persons with HDL cholesterol level above 65 mg/100 ml. In this study, HDL cholesterol appears to have the strongest relationship to coronary artery disease of all the lipid fractions.

The reports which indicate an association with the level of HDL cholesterol and blood glucose, weight, cigarette smoking, and triglycerides are confusing and debatable. The Framingham study[8] did show a negative correlation with triglyceride and weight. However, triglyceride did not appear to be a risk factor in heart disease at least in men. However, weight reduction does lower triglycerides, but its effect on HDL cholesterol may also be positive. Exercise itself may increase the level of HDL cholesterol.

Thus, the type of cholesterol one would most likely like to have, would be high levels of HDL cholesterol and low levels of LDL cholesterol.

What does this all mean concerning clinical practice of medicine? Obviously, it means that anyone who has a high level of plain, old ordinary serum cholesterol has a risk factor for developing coronary artery disease. It would also indicate that an individual who has a low level of cholesterol, like 130 or 140 mg/100ml., stand a reduced or negligible chance for coronary artery disease. However, there are large number of Americans whose cholesterol level falls between 200 and 300 mg/100ml. and a measurement of HDL cholesterol would be of benefit. For example, if a patient had a cholesterol of 250 mg/100 ml. and the HDL cholesterol was 20 mg/100 ml., he stands a greater risk of developing coronary artery disease than someone who has the same serum cholesterol level, but whose HDL cholesterol level is 80 or 90 mg/100 ml. Treatment should be more vigorous in the first case.

In summary, cholesterol is found in all lipoproteins (chylomicrons, LDL, VLDL, & HDL). High levels of HDL cholesterol infer protection against coronary heart disease and high levels of LDL cholesterol infer accelerated coronary heart disease.

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*Seminars in Gastroenterology and Liver Disease*

# Acute Gastric Erosions

**Leon A. Rigberg, M.D.**

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Gastric erosions probably account for 50% to 70% of upper GI bleeding. The advent of fiberendoscopy has provided the instrumentation for this diagnosis. Gastric erosions can be diagnosed by upper GI series with the use of carbondioxide producing tablets, primarily available in far Eastern countries. Here in the United States, Magnesium Citrate can be used to microdisperse the barium to allow a sharper view of the mucosa.

Gastric erosions by definition are multiple, focal, generally small, less than a millimeter in size, tend to occur more in the proximal portion of the stomach and do not penetrate the muscularus mucosa. The bleeding that occurs tends to be painless, "coffee ground" color and consistency and associated with hematest positive stools. Massive bleeding is more unusual and when it occurs it tends to occur late. The level of penetration is not within the submucosa where larger arterioles reside, but primarily the capillary meshwork in the gastric glandular area is the source of the blood loss. Erosions occurring in the distal portion of the stomach and in the duodenum, being slightly larger than millimeter in diameter have been termed "stre ulcerations." Stress ulcerations tend to occur a b later in the course of the traumatized patien generally between the second and the tenth day aft the trauma. Both gastric erosions and the stre ulcerations rarely cause perforation into the peritone cavity. *Gastric erosions* have been associated wit

1) aspirin consumption
2) alcohol consumption
3) bile reflux
4) steroid administration

*Stress ulcerations* have been associated with tl following disorders:

1) Shock
   a) Cardiogenic shock
   b) Hemorragic shock
   c) Endotoxic shock
2) Trauma
   a) Fractures
   b) Burns
   c) Crush injury
3) Peritonitis

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) Respiratory failure
) Renal failure
) Jaundice

Several recent studies involving traumatized indiviuals, one study from automobile accident victims, nother study occurring with military personnel in ietnam, 100% by endoscopic evaluation were found have superficial erosions associated with erosive astritis. Not all of these developed clinically evident ress ulcerations and bleeding.

The pathophysiology of gastric erosions at present centered around the "gastric mucosal barrier", hich is the primary defense against gastric erosions. essence, the mucosal barrier prevents autodigestion the stomach. This property of the gastric mucosa npedes acid diffusion from the stomach lumen into e gastric mucosal gland and likewise it impedes the iffusion of sodium from the gastric mucosa into the men. The major part of the gastric mucosal barrier is lipid membrane formed at the apical portion of the rface epithelial cells. The integrity of this membrane directly related to:

the quality of the gastric mucosa
the integrity of the glandular epithelium, which can be disrupted under conditions of duodenal and gastric ulcers.
Statistically various blood groups tend to determine the quality of this barrier.

actors that tend to increase the permeability of this ucosal barrier, can be listed in several general tagories:

Ischemia — seen in various shock and sepsis states, trauma and burns.
Endocrine — steroids
Pharmacological agents — alcohol, aspirin, anti-inflammatory agents and colchicine.
Physiological — bile reflux
Neurological — brain injury, psychiatric diseases.
Gastric pathology — ulcer disease, pyloric sphincter dysfunction, gastric atrophy, uremia.
Protein deficiencies associated with Vitamin A and Vitamin C deficiency.

All investigators agree that *acid* must be present for osions to develop. Experimentally, ischemia has ways been present when erosions appear, probably oduced by *disruption* of the gastric microcirculation. e combination of theories at this point, suggest that ere is rapid ejection of mucous from the apical rtion of the surface cells which disrupts the memane and then allows the hydrogen ion to permeate e epitheleal layer. From this point, there tends to be release of vasoactive amines from tissue mast cells, the sub-mucosa region, which causes vasonstriction and this produces further ischemia and ntinuation of this cycle with the "acid back diffuon." Gastric motility is stimulated with the "acid ck diffusion." Gastric motility is stimulated by an crease in cholinergic activity. Release of histamine results in increased gastric acid and pepsinogen production. which then enters the stomach lumen at the same rate that it diffuses back into the mucosa. Further vasodilatation increases blood flow to the mucosa region with increased capillary permeability and increased capillary pressure with resultant loss of protein and as capillaries are destroyed, brisk bleeding occurs. The above theory, has been challenged, since under experimental conditions of endotoxic shock, gastric erosions have been shown to be present without the finding of back diffusion of acid into the gastric mucosa. For the moment, all forms of therapy are directed towards the theory of back diffusion and disruption of the mucosal barrier.

Before treatment can be instituted, diagnosis must be made and/or suspected. In the previous list of pathologic conditions, depending upon the degree of stress, trauma, burn, etc. one must begin therapy quickly to prevent further progression. If bleeding is present, endoscopy can provide the diagnosis. Iced saline lavage is helpful for control of bleeding. If bleeding is not present, then antacid therapy may increase the gastric PH to above 5, which deactivates pepsin and buffers acid. The routine usage of anticholinergics is not recommended since their true value is in question. Large doses of Vitamin A, 100,000 milligrams Iu. per day in divided doses, has some rationals since in massively burned patients, there has been noted to be a decrease in the serum Vitamin A concentration as well as the hepatic Vitamin A concentration. Large doses of Vitamin C also has some theoretic value. As of now, a new medication, Cimetidine, an H2 blocking agent with the trade name of Tagamet (SKF), in dosages of 300 mgs., every six hours, orally or intravenously can be utilized since this is the most potent inhibitor of gastric acid available today. Should bleeding become uncontrolled and/or perforation occur, then surgery is indicated with vagotomy and pylorplasty and oversewing of ulcers. This has been associated with anywhere from 30 to 50 percent mortality rate. There is also approximately a 50 to 70 percent chance of rebleeding after surgery has been performed. Of interest, ACTH has been shown to change the composition of the sialic acid and hexosamine in the gastric mucous and has been shown, at least in laboratory animals, to prolong the cycle of gastric cell regeneration from three days to one week.

In conclusion, gastric erosions are quite commonly associated with many acute diseases and traumatic events as well as with generally used anti-inflammatory medications. Awareness of these associations is necessary if one is to prevent mortality. At present, it may be worthwhile to treat the acutely ill patient with antacids or Cimetadine in an effort to *prevent* gastric erosions, or as an alternative, to monitor the stools for occult blood and if positive, then institute appropriate therapy.

*Obstetrics*
*and Gynecology*

# Guidelines For Diagnostic X-Ray Examination Of Fertile Women

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Of the many dilemmas facing the clinician in the daily practice of Obstetrics and Gynecology, few can equal the apprehension generated in the decision for or against ordering X-ray determinations during pregnancy. At what stage of development can the fetus be "safely" exposed to radiation without the risk of somatic or genetic damage? Should all diagnostic investigation be withheld from the pregnant patient, regardless of indication? Is it feasible, as some have advocated, to order no diagnostic X-ray determinations in the second half of the menstrual cycle? Some hospitals are currently doing pregnancy tests as part of the admission routine on all female patients in the reproductive age group to discover possible pregnancies unknown to the attending physician. What of the medico-legal liability in doing (or not doing) medically indicated diagnostic X-ray procedures in the pregnant woman?

Recognizing that firm criteria are necessary, the American College of Obstetricians and Gynecologists, in cooperation with the American College of Radiology, has recently circulated the following guidelines to all its fellows. Presented as a "Statement of Policy" by the excutive board of ACOG this publication is reproduced below with their permission. It is hoped that this will be of assistance to all practitioners who are currently treating fertile and pregnant females.

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## Introduction

Questions have arisen recently in both the scientific literature and the public press concerning potential risks to the fetus from diagnostic x-ray examination of the mother immediately prior to, or in the early weeks of pregnancy. Such questions deal with the degree of risk and with the need, feasibility and means by wh such risks may be minimized.

The clinical problems usually present to t attending physician in one of two contexts: 1) T woman who is known to be in the early stages pregnancy presents with a health problem wh indicates an x-ray examination. 2) A woman who h had x-ray examination is found to have been in t early stages of pregnancy at the time of the exami tion. In both instances it is necessary for the physic to understand the true extent of the potential risk, a thus to be able to counsel the patient properly.

## Definition of Risk

The levels of radiation involved in abdominal a pelvic diagnostic procedures are low, generally le than one rad absorbed dose at the midplane of t abdomen. The midplane is chosen since this would best approximate the location of the embryo or fetu No direct biological evidence exists to indicate th harm to humans would result at this dose level. So epidemiologic studies suggest that the statistical ris of undesirable effects are increased for a fetus exposure of the mother to diagnositc x-rays duri pregnancy. Other studies suggest that doses at high levels (100 rads or more) can cause undesirable effec in humans. Animal studies (i.e. indirect eviden suggest that teratogenic effects can be caused absorbed doses below 100 rads, but still well abo diagnostic levels.

The problem of defining such risks is complicat because the effects attributed to x-ray exposures al occur in the absence of such exposures. From radi biological literature, using linear extrapolation, it m be concluded that the hypothetical risk of observable anomaly in a fetus from diagnostic radi tion does not exceed 1 to 5 per 1,000 per rad. This substantially less than the natural incidence of 40 p 1,000 of observed birth anomalies.

Ninety-five percent of women scheduled for x-r examination will not be pregnant. If a pregnancy should occur, it is better that x-ray exposure be during the first and second weeks following conception than ater, since the next four weeks are probably the most critical with respect to production of observable anomalies in the unborn child.

**Minimizing the Risk**

X-ray exposures of the fetus are a real or potential problem only in the instance of examinations of the abdomen or pelvis. Examination of other parts of the body should not result in measurable radiation to a fetus if the examination is conducted properly to protect against scattered radiation. Effective beam imitation is mandatory when performing any x-ray technique. Abdominal shielding may be utilized if such precaution does not interfere with the purpose of the examination.

The extent of an x-ray procedure can be controlled by a consultation between the attending physician and the consultant radiologist to determine if the physician can limit the amount of information desired from the procedure. Attention to proper x-ray technique and beam restriction can be emphasized. Shielding of the ovaries or uterus is seldom possible when the area of interest is itself within the abdomen.

Where pregnancy or the potential of pregnancy exists, the attending physician should consider alternative methods of obtaining diagnostic information if such exists. If an x-ray procedure is clearly indicated for clinical reasons, the physician should apprise the radiologist of the possibility of pregnancy and consult with him about the extent of the examination.

Attempts to schedule abdominal x-ray examinations in relation to a woman's menstrual cycle are of little value. The developing ovum is at risk prior to ovulation as well as subsequently. This, it is erroneous to assume that any time is "safer" for radiation exposures than another.

**Guidelines**

The following guidelines are suggested:

1. The use of x-ray examinations should be considered on an individual basis. Concern over harmful effects should not prevent the proper use of radiation exposure when significant diagnostic information can be obtained. Pre-examination consultation with a radiologist may be useful in obtaining optimal information from the x-ray exposure.
2. There is no measurable advantage to scheduling diagnostic x-ray examinations at any particular time during a normal menstrual cycle.
3. The degree of risk involved in an x-ray examination if the person is pregnant, or should become pregnant, should be explained to the patient and documented in her record.

Bibliography Available On Request

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*Oncology*

# Tumor Viruses and Human Cancer

## Leukemia and RNA Tumor Viruses

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## INTRODUCTION

The molecular disturbance (or disturbances) initiating most human cancer is unknown. Epidemiological evidence and animal studies suggest that toxic chemicals, carcinogens, radiation, genetic milieu, and viruses all play a role in certain instances. Tumor viruses are an especially interesting group of possible etiological agents since they may be amenable to molecular manipulations. Tumor viruses are broadly divided into two major categories: DNA tumor viruses and RNA tumor viruses. DNA tumor viruses have been implicated in Burkitt's lymphoma, nasopharyngeal carcinoma, and cervical cancer. RNA tumor viruses may be involved in human breast cancer, leukemia, lymphoma, and sarcoma. The subject of this review will be the evidence for RNA tumor virus involvement in human leukemia.

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## RNA TUMOR VIRUSES

### Structure and Life Cycle

RNA tumor viruses (also known as oncornaviruses, retraviruses, or RNA-dependent DNA polymerase viruses), like most viruses, are composed of nucleic acids, proteins, and carbohydrates (Figure 1, top). The essential and unique structural features of oncornaviruses are the presence of a very large RNA (3 million daltons) and the enzyme reverse transcriptase [1]. The discovery of the enzyme reverse transcriptase in RNA tumor viruses had profound implications for biology[2]. Previously, the "central dogma" of molecular biology mandated that information flow in cells was from DNA→RNA→protein[3]. The discovery of reverse transcriptase indicated that genetic information could flow from RNA→DNA. As one might suspect, RNA tumor viruses have a complex method of replication (Figure 1, bottom), the implications of which are now only beginning to be understood.

### Presence in Animal Leukemias

The first RNA tumor virus was isolated from the sarcoma of a bird in 1917 by Rous. This agent was highly infectious. It was not until the early 1950's, however, that interest in these viruses was rekindled by the isolation of similar viruses from inbred mice. Importantly, in the past fifteen years RNA tumor viruses have been isolated from many wild animals with mesenchymal malignancies (Table 1). In at least three of these animals the disease is both infectious and contagious. Lymphoma in the northern pike is clearly transmitted during spawning by skin and lip contact. Acute leukemia in cats is a highly infectious and contagious disease which is probably transmitted by the oral route during grooming[4]. Higher up on the evolutionary scale, oncornaviruses are routinely isolated from gibbon apes with cancer. Initial studies of cage mates suggest that the disease may also be transmitted by the oral route. The widespread occurrence of RNA tumor viruses in mesenchymal malignancies in animals suggests that a search for their presence in man might be rewarding.

## EVIDENCE IN HUMAN LEUKEMIA FOR RNA TUMOR VIRUSES

The widespread occurrence of oncornaviruses in animal leukemias led to a search for their presence in the human disease. Initial attempts to directly isolate oncornaviruses or to detect them by electron microscopy were largely unsuccessful. These studies were further hampered by the primitive understanding of the biochemistry of RNA tumor viruses. Shortly after the discovery of reverse transcriptase (R.T.) in mouse and avian RNA tumor viruses [2], the presence of this enzyme was sought and detected in human leukemic tissue.[6,7]

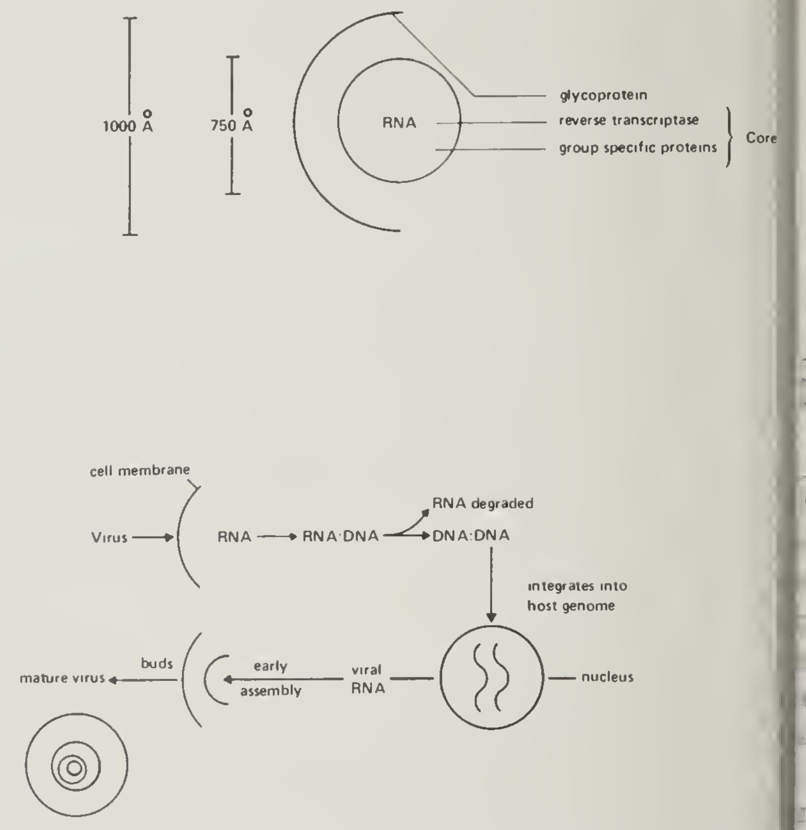
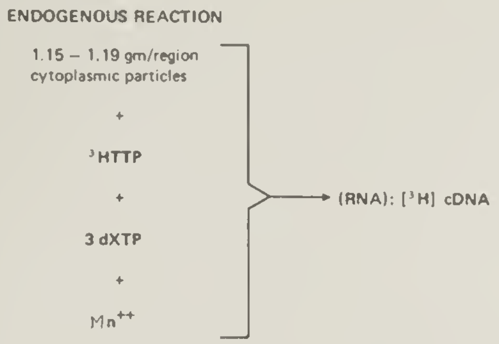


Figure 1. — RNA tumor viruses: structure (top part of figure) a
life cycle (bottom part of figure].

**Table 1**
**C-type RNA Tumor Viruses in Leukemia of Wild Animals**

Birds
Snakes (vipers)
Fish (pike)
Mice
Guinea pig
Cattle
Cats
Gibbon apes

Studies of RNA tumor viruses in human leukemia can be divided into two major categories — identification of components of RNA tumor viruses a
isolation of RNA tumor viruses from human tissu
Since the initial detection of R.T. from hum
leukemic tissue, this enzyme has been rigorous
isolated from only about 20% of cases of myelogeno
leukemia. However, the presence of the enzyme h
been more frequently demonstrated utilizing t
"simultaneous detection" test (Figure 2). With th
assay, R.T. activity has been detected in nearly 100
of cases of myelogenous leukemia studied [8]. Perha
the most interesting aspect of this work is t
detection of R.T. in leukemic leukocytes in 75%
patients in remission of disease[9]. Strikingly, t
synthesized DNA shows similarity to the RNA
known oncornaviruses, including simian sarcon
virus, murine leukemic virus, and in one case, babo
endogenous virus. Attempts to directly detect t
intracellular viral 70S RNA or structural protei
related to known oncornaviruses have met wi
conflicting results. At least in part these conflictir
results reflect the fact that little is known of the
components in known RNA tumor viruses.



Further analysis of the (RNA): [$^3$H] cDNA product is done to assure that the RNA is large and that it is the template for the c DNA. A positive result then confirms both reverse transcriptase and virallike RNA in one simultaneous assay.

Figure 2. — "simultaneous detection" test.

The detection of reverse transcriptase in leukemic ssue in 1970 led to a massive attempt to isolate ncornaviruses from human tissue. Isolation of an ncornavirus from human tissue is a rare event. The rst reported isolate was in 1975[10]. Since that time t least five isolates have been reported from human ukemic tissue by other groups (review in reference ). Recently, isolation of an RNA tumor virus from uman lymphoma was also reported[11]. The remarkble feature of these isolates is that they are composed f two separate primate oncornaviruses — simian arcoma virus (SiSV) and baboon endogenous virus BaEV). SiSV has only been isolated from one animal from the sarcoma of a pet wooly monkey). SiSV can ransform primate cells *in vitro* and *in vivo*. However, hether this virus is infectious or contagious in the ild is unknown. BaEV is an endogenous oncornairus of baboons (that is, a virus which is naturally roduced by the tissues of all *normal* baboons).

In summary, oncornaviral components can be dentified in human leukemia. In most cases, no vidence of oncornaviral components or only subvirion omponents can be detected, while expression of omplete virus is rare. Whether these findings support n etiological role for oncornaviruses is moot. Two ajor conflicting viewpoints presently predominate. he first is that oncornaviruses are etiologically nvolved in human leukemia as infectious agents, but xpression of the virus and its components is electively restricted. The alternative view is that ncornaviruses are not etiologically involved in human eukemia and the detection of oncornaviral components represents a secondary or unrelated phenomenon. ata can be marshalled for both viewpoints. I ersonally favor the former, finding the animal data nd the accumulating human data most compelling hat these viruses are implicated in the etiology of uman leukemia.

## UTURE IMPLICATIONS

The detection of RNA tumor virus components in uman leukemia immediately suggests several areas of nvestigation that may eventually lead to usefulness oth in diagnosis and therapy (Table 2). Four major reas potentially can be developed into indicators of esidual leukemic disease: oncornaviral-related nucleic acids (especially *in situ* hybridization); oncornaviral-related proteins (especially reverse transcriptase); antibodies to viral components; and the "simultaneous detection" test.

Table 2

Implications of the Presence of RNA Tumor Viruses in Human Leukemia

- Diagnosis/Prognosis (detection)
  - Viral nucleic acids
    - (*in situ* hybridization)
  - Viral proteins
    - (reverse transcriptase)
  - Antibodies to viral components
    - "Simultaneous detection" test
- Therapy (control)
  - Interference with viral expression
  - Complement-mediated lysis
  - Antibodies to membrane antigens

**Diagnosis**

Detection of nucleic acids related to known oncornaviral nucleic acids is difficult even in the research setting. However, the use of the *in situ* hybridization assay may obviate some of the difficulties. Basically, this assay detects viral-related nucleic acids in single cells by using a combination of molecular hybridization and high-speed scintillation autoradiography. Nevertheless, there are many technical problems related to this system which need to be worked out before *in situ* hybridization can be used in the clinical setting.

Attempts to detect oncornaviral-related structural proteins in human leukemic tissue have been fraught with difficulties. Recent advances in elucidating the complex processing of viral proteins may offer understanding in this area in the long run. Suffice it to say that much needs to be learned about this system. More successful has been the direct isolation of reverse transcriptase from leukemic tissue. Presently, however, this procedure is confined to specialized research laboratories. Nevertheless, purification of the enzyme should be amenable to rapid sequential affinity chromatographic identification. Such a system is currently being developed and should be available in the near future.

Another method involves detecting antibodies to known oncornaviral proteins in the serum or on the cells of a leukemic individual. The results to date are conflicting and confusing, but the recent direct isolation of antibody to known oncornaviral reverse transcriptase (R. Gallo, personal communication) from the surface of leukemic cells offers future possibilities in this area.

Perhaps the most widely available test to detect oncornaviral-information is the "simultaneous detection" test (Figure 2). This powerful assay has already been used to biochemically detect viral particles in patients with untreated leukemia, leukemia in remission, lymphoma, and preleukemia. The assay has difficulties associated with it, but it is not beyond the capability of the average research laboratory.

**Treatment**

If viruses are etiologic for leukemia, three major areas of virus research may lead to therapeutic advances in leukemia: interference with viral expression, complement-mediated lysis of oncornaviruses, and antibodies to membrane antigens.

Although subtle molecular differences exist between oncornaviral and normal RNA expression, no truly selective inhibitors of oncornaviral expression have yet been developed.

Recent developments in the understanding of the resistance of animals to oncornavirus infection have led to the discovery of a RNA tumor virus complement-mediated lysing system in primates and humans. Important questions need to be answered as to whether this system is defective in humans who develop leukemia. Studies of this system in leukemia-prone individuals, relatives of leukemic patients, and patients with leukemia in remission should be of extreme interest.

The most important advance may come in the area of leukemic specific membrane antigens. In the feline system a specific feline oncornavirus membrane antigen (FOCMA) has been identified, purified, and an antibody to FOCMA raised. It appears that feline leukemia can be both prevented in cats at risk and cured in cats induced to remission with conventional chemotherapy. In the human system the isolation of specific, unique membrane antigens has not yet been sufficiently characterized to proceed in this manner.

## COMMENTS

Genetic information related to RNA tumor viruses is present in human leukemia. The role of these viruses as etiologic or contributing etiologic agents remains be defined. However, the recognition that onco naviruses are involved in human leukemia may ha important preventive, diagnostic, and therapeut implications for the management of human leukemi The major effort of my laboratory will be to develc oncornavirus markers as clinically useful tools human leukemia and to dissect the role (if any) these viruses in two previously unexplored huma diseases — preleukemia and multiple mlyeloma Referral of patients with preleukemia and leukemi will be most appreciated and in fact will be necessar to successfully pursue these efforts.

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*Pediatrics*

# The Hyperactive Child Grows Up

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Despite several observations that hyperactive children shed their hyperactivity with maturation[1] or that their hyperactivity disappears between 12 and 18 years of age,[2] a number of other follow-up reports indicate that the syndrome of hyperactivity with attention-concentration deficit[3], which affects one-seventh of all school children[4], persists into young adulthood, when it is associated with poor school performance and also with psychiatric, vocational and criminal problems.[5,6,7]

The hyperactive child syndrome is a behavioral syndrome, without a presently known cause, featuring an attention-concentration deficit, more common in boys. It is characterized by hyperactivity, impulsivity, distractibility with excitability, and is frequently associated with antisocial behavior, specific learning disabilities and depressive symptoms.[8] This syndrome is part of and shares the historical and clinical characteristics of minimal brain dysfunction, or originally defined by Clements[9]. This dysfunction subsumes an over-reaction to emotional stimuli, impulsiveness, inconsistency and unpredictability,. muscular incoordination, speech defects, lack of appropriate fear, impaired learning from experience, perceptual defects, temper tantrums, and abnormalities in the EEG, neurological examination and psychological tests. Clinical diagnosis of these two related conditions can be made by any physician[10,11] and supported by psychological tests[8] and EEG studies[3]

## WITHOUT TREATMENT

Follow-up studies are preponderantly of those subjects who have received minimal or no treatment specifically for this condition, since many subjects are given the retrospective diagnosis of childhood learning disability, hyperkinesis, or minimal brain dysfunction only *after* they are examined in late adolescence or early adult life.[12] Characteristic of this group is poor school performance, worse in oral reading, spelling and arithmetic[1,2].

Psychiatric symptoms were noted in about one-third of those who were studied as young adults, often with frustration shading into depression and feelings of hopelessness.[1,13,14] A perjorative self-image, along with emotional immaturity and the inability to maintain goals was a frequent finding. Vocational development tended to be poor, with less achievement than was expected or demanded by family, peers and spouses. In relation to their underdevelopment and dysmaturation, these children in our experience had more problems with illicit drugs than did their peers.

A disturbing note appears in several long-term studies of hyperactive youths who are, themselves, the children of a hyperactive parent, as these youths show an increased rate of delinquency, psychopathy, and crime.[8,4,7] In addition, learning disabled individuals as adults tend to propagate similar children, by assortative mating.[13]

## THE TREATED GROUP

On the other hand, the hyperkinetic or learning disabled child who receives empathetic and multidisciplinary treatment, fares far better.[1,16,14] Treat-

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Presented before The Arizona State Medical Association, Annual Meeting, April 29, 1977. Reprint requests to Dr. Gorman, 5602 East Nauni Valley Dr., Scottsdale, AZ 85253.

ment begins with the physician directing the diagnosis and elimination of contributory medical and surgical disorders. The distinction between frustration, with its basis in a current, often remediable situation, and depression, which is rooted in old, forgotten failures and traumata, should be attacked pragmatically. Treatment with antidepressants such as methylphenidate (Ritalin), or the tricyclic antidepressants in appropriate dosage has been successful in a majority of cases reported by Wood, [17] and in our experience. These medications may ameliorate both the depression and the attention-concentration deficit, by mechanisms which we do not yet understand.

The family, which is often saturated with guilt, requires supportive and educational counseling to become an informed and effective participant in the young patient's rehabilitation. Bibliotherapy, using, for example, Stewart and Olds' "Raising a Hyperactive Child" [18], is often rewarding.

A sophisticated psychologist, who is not only skilled in psychometrics and familiar with local education resources but also competent at personal, family and vocational counseling, is an invaluable member of the team. A review of the Conners behavior rating scales[19] can be effective.[20] Pragmatism earns a premium, as with the youngster whose incomplete conceptualization of mathematical principles was bypassed successfully by his learning to use the hand calculator. Vocational guidance, as well as supervision, is done best with follow-up and feedback.

## SUMMARY

Follow-up studies of "hyperactive children" with motoric overactivity, impulse control problems, attention-concentration deficits, specific learning disabilities and abnormalities on neurologic testing of perception, fine motor and complex coordination functions, indicate that about one-half have serious difficulties with schooling and with vocational, social and personal adaptation when they reach young adult life. Frustration and/or depression appear frequently.

Pragmatic treatment by a team consisting of a family physician or psychiatrist and psychologist working closely with education specialists yields encouraging results in the majority of cases. Correction of medical and surgical defects, use of antidepressant medication, enlisting the family as adjuvant participants in supportive counseling and bibliotherapy, plus educational and vocational counseling, and using follow-up and feedback, can be highly effective.

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*Radiology*

# Case of the Month #26

Glenn C. Cook, M.D. and John C. Bjelland, M.D.

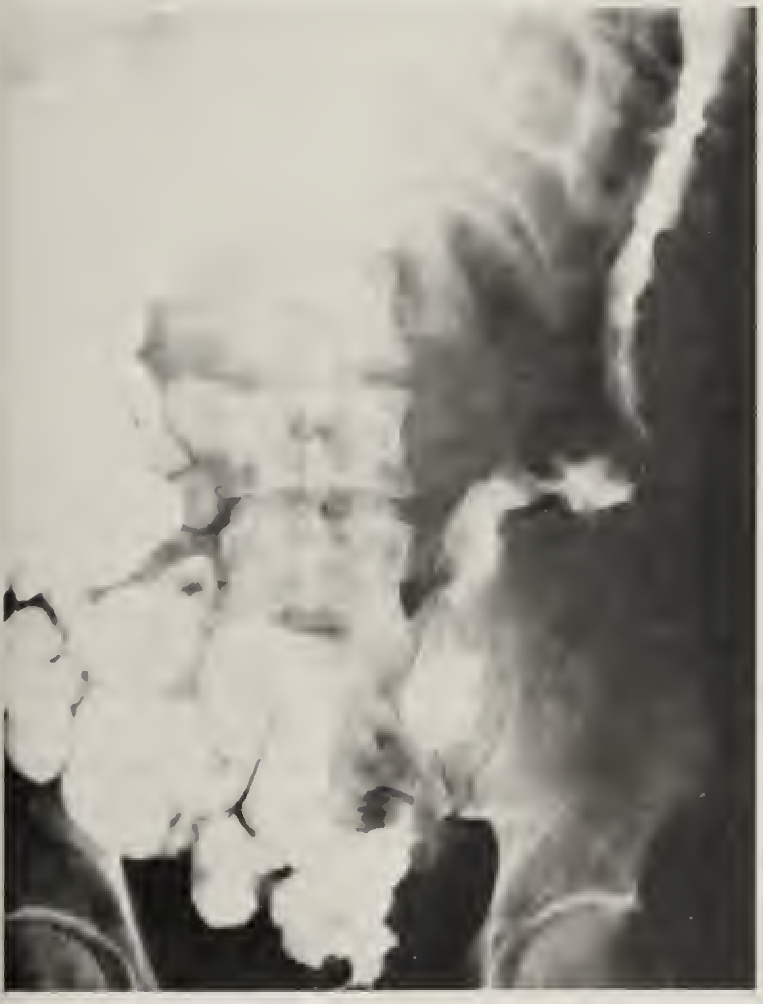

Figure 1: Antero-posterior film from barium enema demonstrating spasm and edema.

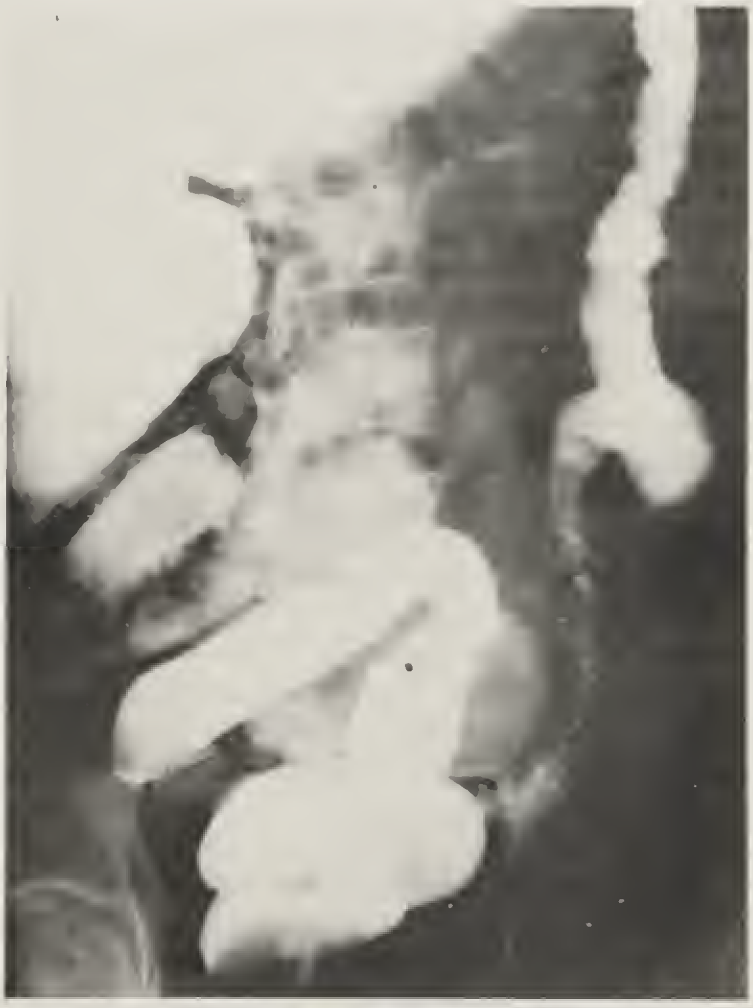

Figure 2: Left posterior oblique projection, note abnormalities in the cecum.

A 34 year old Mexican American presented in heroin vithdrawal with fever, chills, abdominal cramping, nd hematochezia. Microscopic stool examination revealed the presence of white blood cells, but no ova or parasites. Admission stool cultures were negative. At sigmoidoscopy there were no ulcerations, but a bloody edematous mucosa was visualized. Figures 1 and 2 demonstrate findings from the barium enema. What is the differential diagnosis?

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From: Dept. of Radiology U of A Health Sciences Center, Tucson, Az. 85724.

# Shigellosis

Recently the incidence of infectious colitis has increased so that it is now a relatively common disease. It has been postulated that this is related to current trends in mass production and transport of meat and other products, with the associated increased risk of inadequate refrigeration and resultant contamination. Crowded living conditions and poor hygiene predispose to a higher incidence of the infectious colitides. Such epidemeological considerations seem to correlate well with the experiences of the Arizona Public Health Service physicians.

Shigella, a gram negative bacillus, is transmitted by person-to-person contact and/or by contaminated water and food (especially salads). The disease occurs more frequently in institutionalized persons and in those with a history of foreign travel. There has been one report that Shigellosis may also be a venereal disease with an increased incidence of the disease in homosexuals.

The usual clinical presentation is that of bloody diarrhea, fever, chills, abdominal cramps, and vomiting. Proper stool cultures yield the specific diagnosis, but isolation of the bacillus may be difficult in up to 20% of all cases. When stool cultures are negative, roentgenographic and sigmoidoscopic studies become very helpful in the initial patient evaluation.

Radiographic findings are those seen with inflammatory disorders of the bowel. The characteristic signs are illustrated in Figures 1 and 2. These include multiple ulcerations (note the fine irregularities in the cecum and ascending colon). The ulcerations may be superficial or deep and are visible as either fine spiculations (as in this case) or as "collar-button" outpouchings. Spasm and submucosal edema are also invariably present. In this case spasm is characterized by variable segmental contraction in the descending and sigmoid colon. In the same areas one notes thickened irregular mucosal folds due to the underlying submucosal edema. Such folds have been referred to as "thumb printing" of the bowel wall. Skip areas are occasionally seen, but diffuse or generalized colonic invlovement is more common. With the infectious colitides, the characteristic feature is that there is usually return to a normal appearing colon after administration of appropriate therapy.

The findings of this barium enema are consistent with the following differential diagnostic gamut: ulcerative colitis, granulomatous colitis, ischemic colitis, uremic colitis, Henoch-Schonlein purpura colitis, and the various infectious colitides. The specific diagnosis was established in this patient when a third set of stool cultures were positive for *Shigella dysenteriae*.

In summary, the roentgen findings of Shigellosis are similar to those of other inflammatory bowel diseases. On the basis of roentgen findings alone, it is difficult to differentiate ulcerative, granulomatous, infectious and ischemic colitides. Reversibility is the key to roentgen diagnosis.

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## Renal Disease

# Tubulo-Interstitial Diseases

Georgetta Bidwell, M.D.

Editors:
Georgetta C. Bidwell, M.D.
George Nickas, M.D.

The interstitial nephropathies are a large category of nephropathies which include virtually any insult to the nephron that primarily involves the tubulo-interstitial space rather than the glomeruli. Certainly any lesion involving the glomeruli can lead to secondary interstitial changes, but the thrust of this article will be those lesions in which the primary pathology is tubulo-interstitial.

There are two main groups of interstitial nephritities — acute in which there is edema of the interstitium and chronic in which there is fibrosis.

The acute interstitial nephropathies are most often secondary to a hypersensitivity reaction to a drug — the penicillin group being most often implicated. Clinically the patient may present with fever, eosinophilia, decreased concentrating ability, normal or decreased urine volume and a non specific sediment with minimal proteinuria. Renal biopsy specimens frequently show interstitial edema, some round cell and eosinophilic infiltrate plus positive linear immunoflorescent staining of the tubules. Circulating anti-tubular basement membrane antibodies also are frequently present.

The course is relatively benign with improvement of renal function following drug withdrawal. The need for chronic or even acute dialysis is rare. There is no consistent value to steroids in these cases — although edema and eosinophilia are decreased and some improvement in function may occur coincident with steroid therapy.

The chronic interstitial nephropathies are due to fibrosis of the interstitium and are reflected in renal functional impairment. Indeed studies have indicated better structure — function correlation between degree of interstitial fibrosis and creatinine than between glomerulo lesions and creatinine.[1]

Etiologically chronic interstitial nephropathies (I.N.) can result from a host of varied renal insults ranging from chronic inflammation secondary to infection, metabolic disorders (increased uric acid, decreased calcium or potassium), Toxins (analgesics, lead), vascular injuries (atheroembolic disease, acute tubular necrosis), immunologic injury (Transplant rejection), hereditary disorders (Alports, medullary cystic disease) to rarer causes such as radiation nephritis or even environmental factors (Balkan Nephropathy).

Although there are varied etiologies, patients present with a constellation of symptoms quite similar and related to abnormal tubular function. Briefly, the proximal tubule with an epithelial surface modified for reabsorption is responsible for significant sodium, water, chloride, calcium, bicarbonate, amino acids, phosphate and glucose reabsorption. The distal tubule with a secretory epithelium is responsible for some sodium reabsorption, but more importantly for potassium, H + ion, and uric acid secretion. The collecting duct and long loops of Henle are related to free water clearance and the ability to generate a concentrated urine.

We would expect therefore, deficits in tubule function to be manifested by abnormalities in the blood and urine reflecting the defects in tubular reabsorption and secretion. Clinically, patients with I.N. present with loss of concentrating ability — usually the first sign of functional impairment — increased sodium in the urine, and a decreased ability to handle an acid load. A renal tubular acidosis picture occurs-predominately distal in nature with a hypokalemic, hyperchloremic matabolic acidosis. Usually the course is insidious with waxing and waning of renal function secondary to degrees of edema verses fibrosis. With the exception of radiation nephritis and urate nephropathy hypertension is a less common problem than in glomerular disease and is a late manifestation at the stage of moderate to severe renal functional impairment. Urine sediment is non specific with low specific gravity, minimal proteinuria, a few RBC, WBC, and occasional WBC casts, epithelial and hyaline casts.

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From: 500 E. Thomas Rd., Ste 308, Phoenix, AZ 85012

Although an in depth discussion of each I.N. is not possible in a short article such as this, two etiologies should be given special consideration.

The term chronic pyelonephritis is better reserved for the I.N. felt to have an infectious etiology. This has long been a controversial area spanning the spectrum from the time all I.N. was presumed on an infectious basis to the place where chronic interstitial inflammation and scarring secondary to recurrent infection is considered only one etiology of I.N. Indeed infection alone without immunological defect in the host or without a set up for ongoing immunological damage probably does not result in chronic I.N.

The ever increasing cause of I.N. in Australia, the United Kingdom and the United States is felt to be secondary to analgesic abuse. One offending agent is Phenacetin — converted to Acetaminophen metabolite in the body, but other compounds like Percogesic, Percobarb and ASA have been implicated alone or in combination.[2] The major clue apart from a history of heavy analgesic use or chronic pain syndromes is sterile pyuria and loss of maximal concentrating ability.

More dramatically the patient may present with papillary necrosis. The radiographic picture may be one of caliceal blunting and distortion not unlike that in the other I.N. Much controversy exists as to type of agents involved and doses required, but it is a dose related phenomena with at least one gram per day for one to three years required.[3] Furthermore, improvement in renal function results from removal of the offending agents and may even obviate the need for dialysis in some patients with advanced disease. The effects of all tubular excreted agents are cumulative and toxic effects may be more than additive in producing tubular damage — especially when there is already some tubular damage and renal functional impairment. Thus the above dose minimum may be less in cases of renal insufficiency or if the agents are given in association with other tubular toxins.

Therapy of all the I.N. is symptomatic. It consists of treatment of any threat to ongoing renal damage — i.e. removal of known tubular toxins, treatment of hypertension which increases renal damage in a cascading effect toward end stage disease, and treatment of any infectious process in an attempt to decrease inflammation and scarring.

In summary the I.N. encompass a broad range of renal diseases to date less specifically classified structurally than the glomerular diseases but with some common constellation of clinical manifestations.

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Special Article

# Medicine In Mexico

## V. Tropical Disease

Charles C. Daschbach
Robin J. Connolly

Tropical diseases in Mexico are e
demic to many rural and jungle regions
the southern *tierra caliente* or "h
country." They are generally linked t
sanitation problems, absence of vect
control, ignorance, and long-term isol
tion of the villages. Their eradicatio
comes under the dual jurisdiction of th
Secretariat of Public Health and th
National Institute of Tropical Diseases
and they present an unusual aspect to th
spectrum of disease in this rapidl
developing country.

Many of these diseases are not re
stricted to the tropics, with bacillar
dysentery and amebiasis endemic an
widespread in Mexico's Northern, Cen
tral, and Gulf regions. In 1973 enteriti
and diarrheal diseases accounted for ove
12% of all deaths in the country, wit
amebiasis (58,926 cases and 2,335 deaths
and bacillary dysentery (8,320 cases an
582 deaths) particularly devastating t
children under 5 years of age. Also a
important factor in enteritis mortality ar
the commonly found intestinal nema
todes, *Ancylostoma* (hookworm); *Ascar*
(roundworm), *Trichuris* (pinworm) an
*Strongyloides*.

Typhoid and parathphoid also contr
bute heavily to enteritis mortality i
Mexico. In the 1972 typhoid epidemic, th
number of cases passed the 1960 leve
(7,645 cases) and initiated a vaccinatio
program which reached 5 million peopl
The most recent outbreak involved ove
300 persons in Guanajuato in July
1976. In all of Latin America's diarrhe
epidemics, poor sanitation always lead
the familiar cluster of favorable cond
tions.

In spite of active eradication program
over the last 20 years, malaria is sti
widely distributed in Latin America
Mexico has recently shown a noticeabl
increase in the incidence of malaria wit
175,000 cases in 1974. The endemi
transmission areas stretch through th
Southern states, the Gulf region, an
along the western coast, representin

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Fourth semester medical students at th
Autonomous University of Guadalajara. Ad
dress reprint requests to Mr. Daschbach,
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most 58% of Mexico's land area. alarial chloroquinine resistance has not en reported in Mexico yet, but has en recently detected in Venezuela. The irrent antimalarial campaign of the SSA 'ublic Health Secretariat) employs over 000 persons in phases of mosquito ntrol, treatment, education and adinistration.

The prevalence of Leprosy, or Hanen's disease, in Mexico is difficult to etermine. Government estimates range om 30,000 to 70,000 with about 15,000 ises officially registered. It is endemic three broad regions with the highest revalence (more than one case per 1,000 ersons) in the States of Colima, Sinaloa id Guanajuato. Of the more than 700 w cases registered each year, 54% are the lepromatous type, 20% are tuberiloid, and the rest are of the diffuse of ndifferentiated group. A peculiar type diffuse lepromatosis (*Lepra manchada*) is been described as occurring only in entral America and Mexico's State of inaloa. In this particular form, small red sions appear, eventually darken in their enter, crust, and then drop off (called ie Lucio phenomenon). The SSA began s modern antileprosy campaign in 1960, id now operates four dermatological enters, seven smaller clinics, and 23 obile brigades.

In Mexico, there are three endemic foci onchocerciasis or "river blindness." his tissue invading nematode is prevant through its vector, the black fly *imulium*, on the western slopes of the ierras from 600 to 2,000 meters altitude Southern Oaxaca and in two areas in ie State of Chiapas. In 1973 there were 623 registered cases and it is most ommonly found among the coffee planta-on workers in these areas. Problems icing the control of the vector *Simulium* Mexico are principally the mountainous rrain in which they live and their reference for breeding in very small reams in high rainfall zones. In one of ie endemic foci in Chiapas, for example, iis area covers 9,000 km$^2$ with at least ,000 small streams which support their reeding. At present, the SSA has 14 iobile teams of five workers each, tacking vector control in the three foci.

The statistics given above do not eflect the true progress which Mexico as made in the tropical disease arena. t the turn of the century, there were ,570 *recorded* deaths due to malaria id 2,982 from yellow fever. Since 1933 overnmental medical brigades have exmined 200,000 persons and treated over ,000 persons in onchocerciasis zones. he obstacles faced today by these iobile brigades — rugged geography, iclement weather, elusive vectors — are ill considerable, and Mexico edges owly, but continuously, toward eradica-on of tropical disease.

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# Out Of Context

John W. Kennedy, M.D.
"Dry Gulch Jake"

These excerpts from contemporary medical writings are obviously "out of context" and may at times be amusing. Less frequently they are instructive and not uncommonly, they are vexing.

"Medicine is neither an art nor a science. It is a profession, a learned calling devoted to practical ends of preserving life and alleviating suffering." "A good physician is one who thinks about you between visits."

Mark D. Altschule, M.D.
"What Medicine is About 1975"

* * *

"With purity and holiness will I pass my life and practice my art, and abstain from every voluntary act of mischief and corrpution — unless constrained to do otherwise by the requirements of insurance payors or by direction by the Department of Health, Education, and Welfare or the Social Security Administration."

Dr. Franzblau
"Hippocrates Revisited," JAMA 1977

* * *

"The physician should remember that his attitudes are reflected in his behavior." "Dysfunctional attitudes toward the chemically addicted patient leads to dysfunctional behavior in diagnosis and treatment . . ."

Translation: "Alcohol and drug abuse represent problems I cannot help or treat."

Comment: The relapse rate is so horrendous and the time requirement so great only those with millions of tons of empathy can bear the burden of attending these unfortunate patients.

"Physicians Attitude" JAMA May 1977

"A hospital which now spends fifty thousand a year to attend to federal regulations could, over a ten year period, take the same money and buy five million dollars worth of technology for itself." (I would have preferred that the author of this said something about also reintroducing, reemphasizing, and reemploying RN's for bedside nursing. jwk)

"Private Practice 1977'

* * *

A prime example of the cost of complying with HEW and Health Planning Agency certificates of need, is that of a Community Hospital in a rural area of Arizona. They applied for a certificate of need to enable them to purchase a scope broncho or gastro, I am not sure which. The paper work, hiring an attorney to help push through the bureaucracy and its phalanx of xerox machinery, cost the hospital $8,000. The cost of the instrument itself was $5,000.

A certificate of need is a costly document but highly touted by the health planners at the local and national level.

* * *

Regional Hypothermia is said to be of value when extensive local renal surgery is required to remove staghorn calculi or multiple kidney stones. These operative procedures often require interruption of the renal blood supply. Although far from free of complications this method is thought best to "conserve as much as possible functioning kidney tissue, reducing blood loss peropteratively and giving the greatest possibility for complete stone removal." So much for giving the kidney cold turkey.

Scandinavina J. Urol Vo. II, 1977

* * *

The maze through which a new drug or for that matter a new biological discovery, the maze through which such a finding must pass to reach clinical application is horrendous.

The Papinicalou vaginal smear was a research tool used by Doctor Papinicalou to study the estrous cycle of the guinea pig in the early 1920's. The Pap smear as we know it remained in the research laboratories until it was rescued by Papinicalou himself who recognized that it would be highly useful clinically for detection of cervial and uterine body carcinoma but its time did not arrive until the 1940's and 50's. So much for a clinical application lag.

* * *

Epidemiologists have noted that breast cancer is realtively uncommon among Japanese, Chinese and American Indian women. Not so with U.S. caucasian women as we know to our sorrow. Dr. E. Matsunoga a Japanese geneticist showed that the trait of dry carumen is hereditary and is controlled by a single pair of genes. But it is recessive to the wet carumen and is lost when caucasians are crossed with Orientals. In other words the women who have less incidentce of breast cancer carry the recessive gene controlling or producing the wet cerumen. Breast and ear wax glands are both modified sweat glands of the apocrine type. (You must take it from there how to make these dry ear waxers dominant instead of recessive genes and thus bring on a population of dry ear waxers who are more resistant to breast cancer).

The Consumer Products Safety Commission (CPSC) was set up in 1972. It's bureaucrat chairman was said to have "more power than a bad man would need and a good man would want". Child proof caps on hazardous substances is CPSC's best known achievement, especially admired and beloved by the nation's arthritic sufferers trying frantically to open their aspirin bottle.

Private Practice, April 1977

* * *

"The AMA needs a president who has the recognition and the stature that George Meany and Leonard Woodcock have", argues Dr. White a psychiatrist in Kentfield, California, and a former president of the Marion Medical Society. "I mean someone who can call up the President of the United States and not have to explain who is calling. You can't take on the pros in Washington any more with an amateur organization".

Medical World News, July 25, 1977

* * *

Why Cesareans have doubled in six years.

"At one time the onus was on the obstetrician to document absolute need for abdominal intervention, and a low rate was equated with obstetric expertise", observes Dr. Gordon W. Douglas, Chairman of the OB Gyn Department at New York University.

"Not any more," Dr. Douglas says. "These days the focus is on avoiding a bad outcome, and since section with appropriate anesthesia and support systems is so safe, the maxim 'better safe than sorry' has taken on new meaning."

Like some of you I am a product of the era when "a low rate was equated with obstetric expertise", in this abstract nothing is said about the present morbidity or mortality rate of cesarean section.

American Journal of Obstetrics & Gynecology as quoted in Medical World News, July 25, 1977

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*U. of A.*
*Grand Rounds*

# The Insulin-Dependent Diabetic Patient

## (Unstable Diabetes Mellitus)

Rubin Bressler, M.D.

### I. Physiology

Diabetes mellitus may be considered as an inherited abnormality characterized by fasting and/or post-prandial hyperglycemia, due to decreased secretion and/or decreased effectiveness of plasma insulin. As a result of the diminished levels or effectiveness of insulin, a series of biochemical abnormalities become evident in the metabolism of carbohydrates, protein, and lipids.

The insulin deficient state results in a failure of glucose to penetrate the cell membranes of adipose tissue and muscle. Intracellular glucose deficits in insulin-sensitive cells result in the breakdown of triglyceride to free fatty acids and protein to amino acids. These compounds serve as metabolic fuels for energy and as substrates for gluconeogenesis and ketogenesis in the liver and kidneys.

Excessive mobilization of fatty acids from adipose tissue results in their increased conversion to ketone bodies (acetoacetic and B-hydroxybutyric acids, end products of fatty acid oxidation), reduction of adipose tissue lipid stores, weight loss, and finally metabolic acidosis. The augmented conversion of muscle protein to carbohydrate precursors (gluconeogenesis) and energy yielding substrates causes a decrease in structural elemer and a further reduction in body weight

Furthermore, the lack of glucose ut ization in the body is associated with t elaboration of a number of hormones particularly growth hormone, epinep rine, glucagon, ACTH, and cortisol — t sum effects of which appear to be furth mobilization of fatty acids and glucone genesis. Growth hormone and cortis also have the undesirable capacity decrease the body's sensitivity to admi ister or endogenous insulin.

The combination of hyperosmolari (resulting from hyperglycemia) and a dosis (due to the production of exce ketone bodies) leads to progressive d hydration and depression of the senso ium. The reversal of these events c occur only with correction of fluid a electrolyte deficits in association with t administration of insulin.

Although it has not been ascertain that more precise quantitative regulati of the blood sugar (closer simulation physiological control) affords protecti against the vascular complications diabetes mellitus, many investigators a practitioners advocate a regimen affor ing as physiologic control of the bloo sugar as is possible without producin wide fluctuations with periodic hypo an hyperglycemic episodes.

The normal person in response to a

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From: Department of Internal Medicine, University of Arizona Health Sciences Center, Tucson, AZ 85724 ral challenge of carbohydrate or a mixed iet secretes sufficient plasma insulin to romote utilization of the ingested gluose and/or amino acids for energy and ffect storage as tissue glycogen and rotein. The pancreatic insulin secretion s regulated by the quantitative nature of he challenge (levels of circulating gluose or amino acids) and is responsive in oth time and quantity to the challenge. his is shown in Figure 1.

The patient with insulin-dependent iabetes mellitus is confronted with a ifferent problem, wherein the metabolsm of nutrients is concerned. The nsulin-treated patient receives a fixed lose of an insulin or insulins and must natch his food intake to the inherent eaks of the insulin's activity. Hence, the iabetic patient must match his food to is insulin intake, in contrast to the ormal person who matches his insulin to is food intake.

## II. Factors Involved in Blood Sugar Control

The labile or unstable (insulin-dependent) diabetic patient is in the main totally dependent upon exogenous insulin for its anabolic and anticatabolic actions. The matching of injected insulin to ingested diet is at best an imperfect one and so the insulin dependent patient experiences wide swings of blood glucose in the course of a day. The work of Molnar and associates at the Mayo Clinic have demonstrated this situation.

Figure 2 shows the control of blood glucose afforded by a regimen which consisted of 4 doses of regular insulin, 3 meals and 3 snacks and 2 hours of exercise daily. Note the wide excursions of blood glucose throughout the day. Blood glucose concentrations on this program ranged from 350 >mg% to <30 mg%.

There are a number of factors which influence the stability of control of the insulin dependent diabetic patient. These include:

(a) **Weight:** Excess weight engenders insensitivity to exogenous or endogenous insulin. Obesity is usually the consequence of excessive food *and* insulin intakes.

(b) **Exercise:** Whereas it takes a fairly marked amount of exercise to potentiate insulin's action (improve the glucose tolerance), it is likely that complete absence of activity results in an insulin insensitive state like that found in the obese patient.

(c) **Insulin:** Proper type, amounts and timing of insulin administration are essential for stable blood sugar control.

(d) **Emotions, infections, and use of certain drugs** can influence diabetic blood

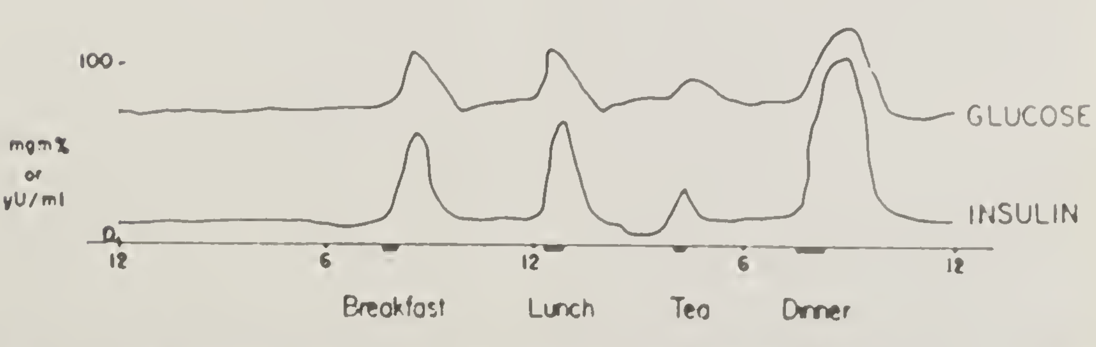

**Figure 1.** The Anabolic (Meal Time) and Anticatabolic (Between Meals) Nature of Insulin Output and Blood Glucose of Normal Subjects.

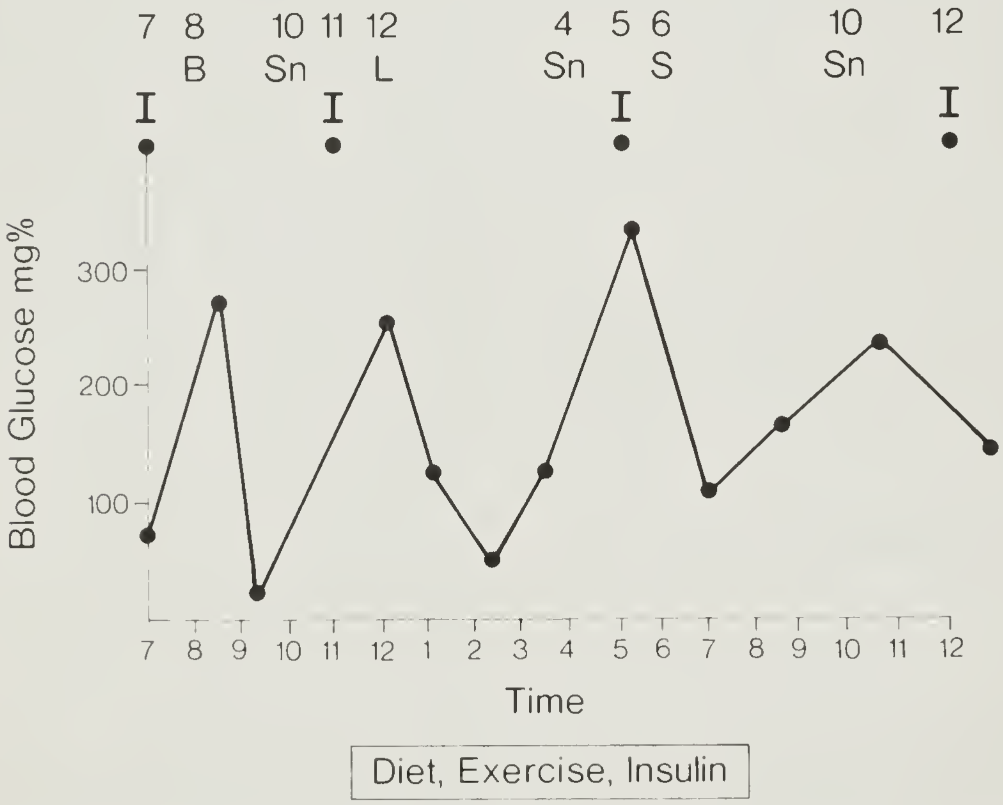

**Figure 2. Diabetic Patient on CZI, Diet, Exercise. Note wide Excursions of Daily Blood Glucose Levels.**

sugar control.

These factors will be focused upon in a series of case presentations.

### III. Case Presentations

### Case Number 1.

K.M., a 21 year old female, was found to have insulin dependent diabetes mellitus at age 11. She was maintained in fair control on varying dosages of NPH insulin over the next 17 years, during which time she underwent a normal pubescence and adolescence. Up to two weeks prior to her present illness she was in good control on a single morning dose of 50 units of NPH insulin.

Two weeks prior to the onset of the present illness, she changed her job as a secretary and undertook a new position as an Administrative Assistant. This position entailed much more responsibility in the area of independent decision making and resulted in a considerable degree of stress. She noted increasing glucosuria and began to experience polydipsia and polyuria. In the ten days prior to her admission to the hospital, she experienced an 8 pound weight loss and chronic fatigue progressing to lethargy. Three days prior to her hospital admission she had an episode of myalgia, neck pain, severe frontal headache and mild elevation of temperature (101°). Associated with this illness was a three day course of intermittent abdominal pain.

The patient had had an intrauterine device (IUD) in place for a period of 13 months without problems of cramping, excessive bleeding or vaginal discharge.

On the two days immediately preceding her admission to the hospital, she became nauseated and intermittently vomited. Throughout the course of the illness, she did not change her insulin dosage. However, because of her inability to eat food or drink liquids on the day prior to admission the patient for the first time, omitted her insulin injection. On this day, she became more lethargic and was brought to the hospital in a semicomatose state.

On admission to the hospital, she had a temperature of 101°, a blood pressure of 105/70 mm Hg, a pulse of 105 per minute, and Kussmaul respirations of 30 per minute. The patient was dehydrated. She had no neuropathy or retinopathy. Abdominal examination revealed hepatomegaly, 3 cm below the right costal margin with tenderness to palpation. The white blood count was 18,000 per mm$^3$ with 90% polys and the urine showed 4+ glucose and 4+ acetone and no bacteria or white blood cells. Blood urea nitrogen was 40 mg% and creatinine 1.8 mg% The blood sugar was 350 mg% and t serum showed heavy acetone at a 1 to dilution. The $HCO^3$ was 8 meg/e and t arterial pH was 7.10.

Which two of the conditions liste below most likely contributed to t patient's ketoacidosis:

1) Incipient renal disease.
2) The intrauterine device.
3) Omission of insulin.
4) The stress related to her new pos tion.
5) Viral hepatitis.

**ANSWER:** The discontinuation of insul therapy (3) and the stress of the ne position (4), were probably importa contributors to the initiation and develo ment of this patient's ketoacidosis wher as the other factors were not.

The discontinuation of insulin was critical error in management and is t probable key accelerating cause of t ketoacidosis. Although precipitati causes for poor diabetic control inclu infection, vascular catastrophies and ps chogenic stresses, the discontinuance insulin is one of the most common caus of diabetic ketoacidosis. Insulin deficien results in a failure of peripheral gluco utilization and permits accelerated brea down of body tissue (muscle, adipo tissue) and the overproduction of gluco (gluconeogenesis) and ketone bodies b the liver. Overproduction of ketones (ac toacetic and b-hydroxybutyric acids) r sults in a metabolic acidosis.

Insulin deficiency leads to a tot catabolic state with the breakdown adipose tissue lipid, muscle protein an liver and muscle glycogen. The ove production of glucose by the liver (gl coneogenesis) results in higher bloo glucose. However, glucose utilization b peripheral tissues is impaired because the lack of insulin. The resultant hype glycemia leads to an osmotic burden an results in dehydration of cells and a osmotic diuresis. Untreated, the proce results in hypovolemic circulatory impai ment and finally coma.. The omission insulin in the insulin-dependent diabet patient who becomes ill from any cau is not advisable. Insulin therapy must maintained even in face of a failure food intake because of insulin's key ro as both an anticatabolic and anabol agent. Insulin's presence is necessary prevent, an unrelenting breakdown body tissues.

The loss of diabetic control has lon been ascribed to periods of emotion stress in patients who are well controlle e precise mechanism of this phenonon has never been thoroughly instigated, but it has been suggested it it might be due to increased output norepinephrine and/or other antagons of insulin's actions.

Choices 1), 2), and 5) were probably important contributors to this pant's illness. The slight rise in BUN and atinine is not unusual in patients with betic ketoacidosis. It probably does represent renal disease. The BUN d creatinine are commonly raised by ydration resulting in prerenal azonia. These values usually return to mal with insulin and fluid therapy ulting in rehydration.

The intrauterine device in the absence infection or excessive bleeding and mping should not affect the control of insulin dependent diabetic patient and bably did not contribute to this ient's illness.

Although the patient showed hepanegaly and abdominal tenderness, they bably do not represent hepatitis, but her an accompaniment of the diaic ketoacidosis. Diabetic ketoacidosis commonly associated with fatty inration of the liver and abdominal pain d tenderness. The serum enzymes GOT, SGPT, Bill irubin and LDH) may o be elevated in uncontrolled diabetes. e possibility of viral hepatitis would be cluded by the rapid conversion of these normal laboratory values to normal h treatment of the ketoacidosis.

**ase Number 2.**

A.O., a 5 ft. 10 in., 140 pound 47 year d male, was found to have insulin pendent diabetes mellitus at age 42. ne onset was characterized by polyuria, lydipsia, polyphagia, weight loss and eakness. Physical findings were normal. n admission to the hospital following scovery of the disease, he was treated ith a single daily dose of 20 units of PH insulin before breakfast. Over the suing years following discharge, his sulin dosage was raised to the present ne of 40 units of NPH insulin before eakfast. Several months piror to visitg his physician for his annual checkup noted, on his current insulin regimen d moderately close adherence to a 2400 lorie diet, he had persistent glucosuria awakening, after breakfast, and after pper. He experienced several mild ypoglycemic reactions around 4:00 p.m. is fasting blood sugars were in the 300 g% range. His pre-supper and postnch urine sugars were frequently negave.

The patient was using no other drugs, had no recent episodes of infection or other illness, and had not altered his exercise schedule in any way.

The patient was treated by changing his pre-breakfast dose of NPH insulin to 25 units of Lente insulin, and adding a second pre-supper dose of 10 units of Lente. On this insulin schedule he became aglucosuric. The fasting blood sugars fell to the 120 mg% range of hypoglycemic reactions did not occur in the afternoon. Which of the following statements are correct in regard to the management of this patient's problem:

1) The physician would have done as well had he merely decreased the number of calories in the patient's diet.

2. The patient exhibited a typical transient response to a single daily dose of NPH insulin and the response of the physician was appropriate.

3) The physician would have done as well with his treatment had he merely increased the exercise schedule of the patient slightly.

4) The change from NPH to Lente insulin resulted in the patient's reversion to good control.

5) This patient represents somewhat of an unusual case in that he had no retinopathy.

**ANSWER:** The only correct answer to the above case is 2).

This patient exhibited a typical transient response to a single daily dose of NPH insulin. Whereas many insulin dependent diabetics can be well controlled by means of a single daily dose of NPH or Lente insulin, others cannot be so regulated and present as problems of control. In order to understand the pathogenesis of certain of these problems, it is important to recognize that diabetic patients may differ in response to a single daily dose of intermediate acting insulin (NPH or Lente). These responses to a single daily injection of insulin have been characterized as normal, transient or delayed responses. They are schematically shown in Figure 3.

Because this patient's NPH effect was transient the period of good control was limited to the middle portion of the day, and he was glucosuric on awakening and after supper. The addition of a second dose of Lente brought him into excellent control.

It is more usual for the patient with a transient response to require additional regular insulin both in the morning and in the evening (AC breakfast and supper).

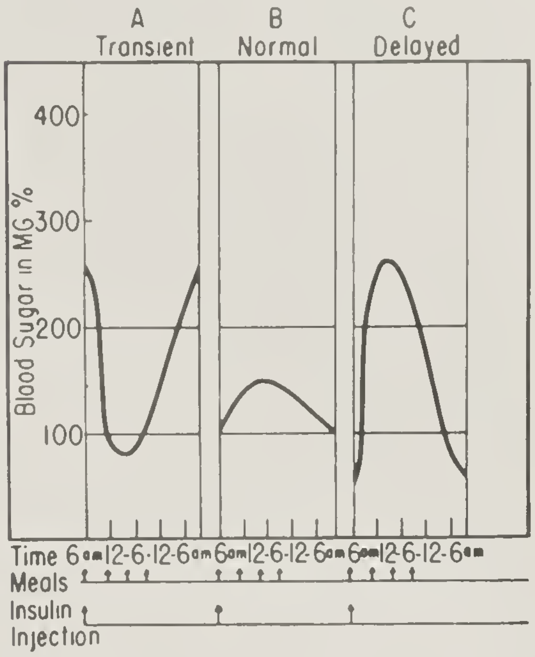

**Figure 3. Responses to a Single Daily Dose of NPH Insulin**

Splitting of the insulin dose with administration of insulin before breakfast and supper, is often necessary for the attainment of good control. Raising the dose of NPH insulin in the morning in order to obtain good control in the evening and throughout the night and next morning often results in afternoon hypoglycemic episodes.

The patient was a 5 ft., 10 in. male, weighing 140 pounds. He must be considered to be in a normal weight range. It is unlikely that reduction of his 2400 calorie diet would have effected any increase in sensitivity to the administered insulin. Although sensitivity to insulin is closely correlated with obesity it is unlikely that small degrees of weight change in non-obese individuals would have significant effects on sensitivity to insulin.

It has been found that very strenuous exercise influences insulin sensitivity. However, it is unlikely that the institution of slight to moderate degrees of exercise would significantly change the patient's sensitivity to insulin. Moreover, in both the case of diet and exercise it is unlikely that the transient response to the NPH (Lente) would be changed.

Lente and NPH insulins have the same time courses of action. Nothing could be gained by substituting one type of insulin for the other. Differences in sensitivity or resistance to these two insulins have not been noted.

The fact that this patient with overt insulin dependent diabetes of five years duration has no retinopathy is not surprising. Diabetic retinopathy appears to be a function of duration of the disease and is very prevalent in those patients who have had the disease for 15-20 years or more. It is not unusual for a patient with a 5-year history of diabetes to be free of retinopathy.

**Case Number 3.**

J. S., a 30 year old thin male, has had insulin dependent diabetes since age 19. Since the onset of his illness he has experienced 6 eipsodes of ketoacidosis and has never been in good control. He has always been treated with a single daily dose of NPH insulin in the 40-60 unit range. Over the years, the patient has developed progressive retinopathy and decreased vision bilaterally. He has had documented pyelonephritis and many of the peripheral nerve and autonomic nervous system complications of diabetes. The patient's urines have been positive for glucose throughout the day. His urine pattern in the clinic has been AC breakfast, 1-2+; AC lunch 3-4+; AC supper 1-2+; HS trace, while on a single dose of NPH insulin. He has had leg pains and chronic fatigue over the week preceding his hospital admission. In the course of the patient's workup it was ascertained that in recent months he had been awakening in the morning with severe headaches until breakfast was ingested. At times he has noted his pajamas to be perspiration soaked upon awakening. He was admitted to the hospital for control of his diabetes.

The patient's insulin dosage was altered and he received 35 units of Lente insulin plus 20 units of semilente insulin before breakfast and 10 units of semilente insulin before supper. On this regimen he experienced a return of strength and a decrease in leg pains and was free of his early awakening headaches.

Which of the following statements about this patient are correct:

1) It was the substitution of Lente for NPH insulin which probably made the difference in control because the patient was allergic to protamine.
2) The early morning headaches, confusion and perspiration probably represent early vascular insufficiency.
3) The patient represents a classic delayed response to NPH (Lente) insulin.
4) The patient's renal disease probably accounts for his unusual response to a single daily dose of NPH insulin.
5) The use of intermediate acting insulin (Lente), plus rapidly acting insulin (semilente) AC breakfast, and rapidly acting insulin (semilente) before supper, is a usual form of treatment for a delayed response to intermediate acting insulins (NPH or Lente).

**ANSWERS**: 3) and 5) are correct.

The patient's poor control cannot be ascribed to the use of NPH rather than Lente insulin since both of these insulins have similar time courses of action. Moreover, insulin insensitivity due to allergies or antibodies to the protamine moiety of NPH insulin has never been reported. These two insulins are both intermediate acting insulins, but their delivery from subcutaneous injection sites are based on different principles. Insulin is an acidic protein with an isoelectric point (pH of minimal solubility) of 5.3. At physiological body of pH of 7.4, it is highly soluble in body fluids and is rapidly absorbed from injection sites. The combination of protamine (a basic protein) with insulin (an acidic protein) results in a complex with an isoelectric point of 7.4. Insulin is released from a depot which is an insoluble complex of protamine and insulin. This accounts for the extended action of NPH insulin. The Lente insulins, on the other hand, are combined with no modifying proteins. Their periods of action are based on the physical form of the insulin crystals. Two physical forms have been produced by adjustment of pH. One, crystalline (larger insulin crystals) and two, amorphous or micro-crystalline. The larger is less soluble and therefore, longer acting. The amorphous form presents more surface area to the body fluids and is more quickly absorbed. The term Lente is used to indicate slow action. The two physical forms of insulin preparations in use are designated semilente for the short acting, amorphous form, and ultralente for the larger crystalline form which is slowly absorbed and longer acting. Lente insulin, itself, is a mixture of seven parts of the ultralente and three parts of the semilente insulins and this mixture has the same time-course as NPH insulin.

The early morning confusion, headache and evidence of diaphoresis almost certainly represents a nocturnal hypoglycemic episode. The disappearance of these episodes with the adjustment of the insulin, as well as their failure to progress, makes insulin hypoglycemia highly likely as a cause of the difficulty.

The patient who is hyperglycemic during the day and normoglycemic to hypoglycemic at night is designated as a delayed responder to NPH insulin. These patients have a delayed onset of action of the NPH dose and often have hypoglycemic episodes at night or in the early morning hours. This patient's course would be characteristic of such a delayed response to either NPH or Lente insulins.

If the hypoglycemic reactions, which occur during sleep, result in the patient awakening with heavy glucosuria and acetonuria, the unsuspecting physician attempting to correct the glucosuria and acetonuria may raise the NPH (Lente dose, and perpetuate the poor contr cycle.

The patient's difficulties are probabl not a consequence of renal disease. Th patient with renal disease has been foun to have a decreased sensitivity to injected insulin, but not to have its tempora response pattern profoundly changed.

In the treatment of the delayed response to NPH (Lente), the dosages an types of insulin used in this patient wer appropriate. In the therapy of th delayed response, it has been found tha the addition of rapidly acting insulin t the morning intermediate acting insulin i essential. A 2 to 1 mixture of NPH an regular insulins, given before breakfast often results in excellent control. Usuall the dose of NPH exceeds that of th regular insulin. It is sometimes necessar to use an additional dose of regula insulin before supper. A typical delaye response patient might be treated wit NPH 20 units + regular insulin 10 unit AC breakfast and 10 units regular insuli AC supper. Patients with a delaye response to NPH or Lente insulin ma also be treated with mixtures of Lent and semilente in a single daily injection In this regimen the more rapid onset o action of semilente affords an earlie insulin effect which may be prolonge enough to cover the patient until th delayed onset of action of Lente become manifest.

**IV. Insulin**

Proper use of insulin is an essentia component of stable control of diabetes.

There are three categories of insuli preparations:

1. **Rapid acting** - Crystalline Zinc Insuli (CZI) or regular insulin. This preparatio has an isoelectric point of 5.3, whicl means that the protein is least soluble a pH 5.3. Therefore, this preparation i soluble at pH 7.4 and is rapid acting. It i administered subcutaneously 1/2 - hours prior to meals. It has a duration o 5-7 hours and has its peak effect at 2- hours.

2. **Intermediary** - Neutral Protamin Haggedorn (NPH) (Isophane). In thi preparation, there is no excess of protamine as there is with preparation #3, so i is possible to mix CZI with NPH withou changing the characteristics of the mixture. The isoelectric point is 7.4 making i least soluble at body pH. This preparation has a duration of 24-48 hours and peak at 6-12 hours.

3. **Long acting** - Protamine Zinc Insuli (PZI). This preparation was designed t allow for only one administration o insulin per day. Its isoelectric point i 7.3, which means that it is poorly soluble Its duration is 36 hours and its peak i 14-24 hours.

In 1951 Lente insulin was discovered

is prepared using a greater amount of c and an acetate buffer rather than a osphate buffer. There are actually ee preparations of Lente insulin:

**Ultralente** - crystalline; slowly ab- bed; long-acting. Equivalent to PZI.

**Semilente** - amorphous or microcrystal- e; rapid, short-acting. Equivalent to I.

**Lente** - 70% ultralente plus 30% nilente. Equivalent to NPH.

The major advantage of the Lente sulins is the ability to tailor-make the xture for the desired response.

Differences in crystal size determine tes of absorption of the Lente insulins. ual weights of small crystal size have ch greater surface area than large ystals and are absorbed more rapidly.

**Control of Diabetes**

Small fluctuations in the blood glucose el are preferred for two reasons:

The insulin dependent diabetic cannot mpensate for large fluctuations.

The dips to hypoglycemia cause a mpensatory release of growth hor- one, cortisol, catecholamines and possi- glucagon which tend to elevate the od sugar leading to poor regulation.

Most diabetics can be controlled early the disease with one daily dose of NPH Lente. After the first 2-3 years of the sease, three types of NPH response erge: (See Figure 3).

In order to determine the patient's sponse type, one must first get the tient's diabetes under control with ystalline zinc insulin (CZI) every six urs, and then follow the blood glucose sponse for 24-48 hours after a 6 a.m. se of NPH. Patients having the tran- nt (Type A) response characteristically ve fasting hyperglycemia and morning d afternoon hypoglycemia. It may be neficial to decrease the NPH dose in e morning in order to reduce the hypo- cemia during the day. Giving another se of NPH in the evening before supper duces the a.m. hyperglycemia.

Good control of the blood sugar across neal may require the addition of CZI to H insulin although the treatment of e transient NPH response often res- nds merely to a redistribution of the H dose. The quantitative distribution ries such that the morning NPH ntributes around two-thirds of the total ily insulin dose;

| | Pre-Breakfast | Pre-Lunch | Pre-Supper |
|---|---|---|---|
| PH | 20 units | 0 | 10 units |

This distribution also holds for the use combinations of CZI plus NPH insulins.

| | Pre-Breakfast | Pre-Lunch | Pre-Supper |
|---|---|---|---|
| PH | 30 units | 0 | 10 units |
| I | 10 units | 0 | 10 units |

Patients with a transient response to NPH or Lente insulin may also be treated with mixtures of Lente and Ultralente in one daily injection. In this regimen the prolonged action of Ultralente serves to afford sufficient retarded insulin release to remove the need for a second dose of Lente or NPH before supper in spite of the transient nature of the response to the Lente (or NPH).

Patients having the delayed (Type C) response characteristically have morning headaches. The nocturnal hypoglycemia may stimulate the release of catecholamines and other hormones leading to hyperglycemia during the day. If these hypoglycemic reactions occur during sleep and a hyperglycemic "rebound" occurs ("Somogyi Effect"), the patient may awaken with heavy glucosuria and acetonuria. The unsuspecting physician may raise the NPH dose and perpetuate the poor control cycle. The "Somogyi Effect" or hyperglycemic response to unrecognized hypoglycemia is most likely to occur in the delayed response patient who experiences pronounced NPH effect during the night and early morning hours of sleep. The addition of CZI before breakfast and before supper if necessary, permits reduction of the NPH dose, abolishes nocturnal hypoglycemia and diurnal hyperglycemia, and effects excellent control.

**VI. Diet**

The diet in the diabetic patient constitutes a type of pharmacological intervention. Since the administration of insulin represents a fixed commitment each day only the diet can be varied in time and amount to match the hypoglycemic activity of the injected dose of insulin.

The food challenge to insulin therapy should be spread out into three meals and three between-meal snacks. This will serve to minimize the acute nature of the carbohydrate challenge and protect against hypoglycemic reactions.

When regular insulin is used it should be given at least 1-1½ hours before a meal, in order to allow a major degree of insulin action to correspond to the carbohydrate absorption.

**VII. Summary**

The insulin dependent diabetic patient may be devoid of endogenous insulin or have only small quantities of residual hormone. Because of this deficit the patient is unable to modulate the anabolic-anticatabolic activities of insulin in response to variations in diet and activity and therefore is physiologically "unstable". Wide fluctuations in blood sugar occur in this type of patient. In response to insulin deficiency or insufficiency the patient goes into a catabolic state characterized by lipolysis, glycogenolysis, proteolysis, gluconeogenesis and ketogenesis. The blood sugar rises in association with increased blood levels of growth hormone, cortisol, glucagon and epinephrine. Both the hormonal and metabolic profile are that of a marked catabolic state.

Insulin therapy reverses this state and its anticatabolic-anabolic actions lower the blood glucose. In response to vigorous exercise or a delay in food intake, hypoglycemia may occur. This elicits the release of epinephrine, ACTH and growth hormone which result in glycogenolysis, stimulate gluconeogenesis and produce a state of insulin insensitivity. The result is an elevation of blood glucose.

The failure to modulate insulin in a manner tuned to variations in diet and activity (and infections, drugs, etc.) results in wide excursions in blood glucose and ketones because the two extremes of the metabolic spectrum are insulin availability (anabolism-carbohydrate use) and insulin deficiency (catabolism-fatty acid oxidation, gluconeogenesis and ketogenesis). The less endogenous insulin that is available for modulation the more unstable the metabolic control even in face of regulated diet and exercise. Moreover, it has been found that glucagon response to insulin hypoglycemia is lower in unstable diabetics. The diminished glucagon response to hypoglycemia further accentuates the lack of sensitive modulation of the blood sugar in the insulin dependent diabetic subject.

The pharmacological armamentaria necessary for physiological control of the blood glucose of the insulin-dependent diabetic patient is not yet available. Physicians must do the best they can with currently available drugs. To do so one must learn to comfortably deal with problems in the use of insulin. The insulin dependent diabetic patient's instability is the result of an inability to modulate insulin supply in the course of the day.

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# Cholesterol:
## Does It Make A Difference?

A recent contribution to the *NEW ENGLAND JOURNAL OF MEDICINE* by Dr. George Mann[1] has raised considerable concern whether our preoccupation with serum cholesterol measurements has any bearing on the development or prevention of atherosclerotic cardiovascular disease. All physicians treating patients with these disorders with low fat, polyunsaturated diets and various medications such as clofibrate and cholestyramine should review this important article.

In essence, data from the Framingham Study indicated that there was *no* relationship between dietary habits and cholesterolemia. In addition, in a Tecumseh, Washington study, 2000 patients were monitored and serum lipids were found *unrelated* to dietary practice. Furthermore, evidence has accrued from clinical trials utilizing diet therapy. As Dr. Mann notes, these trials indicate that "the better the trial design, the less well the diet treatment seems to work". No diet therapy has been shown effective for the prevention or treatment of coronary heart disease. The use of drugs to reduce hypercholesterolemia, although initially effective, over a prolonged period had *no* measureable effect. It's Dr. Mann's conclusion that there is no safe and efficacious drug known for the management of hypercholesterolemia. Although children may benefit from diet and drug therapy if they have hypercholesterolemia, there is no established preventive treatment. According to Dr. Mann, the frequent screening of populations of children for lesser degrees of cholesterolemia is an exercise in "stress induction". To again quote Dr. Mann, "Until effective and acceptable treatments are available such screening is better business than medicine".

In conclusion, Dr. Mann feels that the data indicates that *exercise* appears to exert a beneficial effect on vessels already afflicted with atherosclerotic changes. It may very well be that a "well-toned body" may be the best treatment we presently have to offer for the prevention of atherosclerotic cardiovascular disease.

For the practicing physician the abov raises serious and important consider tions in patient management. It woul seem prudent, as usual, to follow middle of the road course until th questions are more fully resolved. A long as the patient is not made a "dietar cripple" and the side effects of the med cations used do not outweigh any theor tical benefit, the patient will not appa ently suffer. However, we must sta "loose" in order to roll with the ne "punches" which will no doubt be shortl coming.

Marshall B. Block, M.D.
Editor

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[1] Mann, G.V. New England Journal Medicine, 297, "Diet-Heart: End of an Era. Pg. 644-650. Sept. 22, 1977.

# "Short-Changed"

In 1975 the Maricopa County Medica Society received a letter from the Internal Revenue Service suggesting that th combined billing of Arizona Medica Political Action Committee and America Medical Political Action Committee due along with the County's membership due might endanger their status as a ta exempt organization. In response to thi threat, Maricopa County very appropriately dropped the combined billing. Thei example was promptly followed by Pim and the other counties.

AMPAC had struggled for combine billing in the late 60's and had enjoyed considerable boost in membership beginning in 1967. The membership ha remained relatively stable with the to membership of 756 for 1975. Althoug this is still only a small percentage what it should actually be, this membership had allowed the ARMPAC Board Directors enough of a war chest to ver successfully help elect friends of medicin to the State and Federal legislatures This has allowed us many open doors an attentive ears to explain organized med cines to these lawmakers. Certainly ou Malpractice Crisis Committee could no have functioned as effectively as it di without the help of these legislators.

Without the combined billing, the PA membership has dropped down to pitiful 241 for 1977. Usually ARMPA has built up its campaign funds dramat cally in the off-election years, but th 1977 war chest is hardly enough to hel elect the local dogcatcher. If and whe any of the nearly 100 possible recipient come to us for help in the forthcomin election we are going to be horribl embarrassed for lack of funds.

An attorney for AMPAC has contacted he author of the infamous IRS letter and ound him to be unaware of a recent tatutory enactment (Section 527 of the nternal Revenue Code) which appears to xpressly permit 501 (c) (6) organizations o receive political contributions for ransmittal to separate segregated funds. ased on this Maricopa and Pima Counies are planning to return to combined illing for 1978.

Doctor, we need a PAC contribution rom each and every one of you and your pouses for 1978 in order to have much more than token financial support for our riends in the 1978 political races. In light f the seriousness of this deficiency of ampaign dollars, I would solicit late ontributions for 1977. If all the memberhip doesn't get behind ARMPAC in this risis situation; all of organized medicine, s well as our political friends, will be hort-changed in 1978! Send your $20 ontribution to ARMPAC today to Mariopa County Medical Society, 2025 North Central Ave., Phoenix, Az. 85004.

J.F. Kahle, M.D.

## A New Dean

**The essential symbiotic relationship etween the physicians scattered hroughout OUR State and the Univerity of Arizona Medical College is fosterd by the "Dean's Page". With the ppointment of a new Dean, it is appropriate for Dr. Merlin DuVal, Vice President for Health Sciences at the University, to tell us a bit about the man". It goes without saying, that those of us in the "trenches" wish him well. MBB, Editor.**

Thirteen years ago the editors of *ARIZONA MEDICINE* decided to set side a full page dedicated to a monthly statement from the Dean of Arizona's College of Medicine so that the leadership of the Association might remain informed bout developments pertinent to the College. During that period of time three persons have been responsible for the contributions: myself (1964-1971); Jack Layton (1971-1973, as Acting Dean); and Neal Vanselow (1974-1977). With the next issue the number becomes four. The University of Arizona has just named Dr. Louis J. Kettel to be the third dean of the College of Medicine. This nomination has been greeted warmly by the faculty and staff at the College and we are confident that the leadership of *ARIZONA MEDICINE* will also grow to have the same affection, admiration and respect for Dr. Kettel that we do.

Lou is a native of Chicago. He received his college education at Purdue University and both a Master of Science and M.D. degree from Northwestern University. His graduate training in Internal Medicine was taken at the Passavant Memorial Hospital and Northwestern University Medical Center in Chicago. After two years of military service, he became a U.S.P.H.S. fellow in cardiovascular research and then joined the faculty at Northwestern University when he was named chief of the Pulmonary Disease Section at the VA Research Hospital, also in Chicago.

In 1968, we were successful in recruiting Dr. Kettel to the University of Arizona where he joined the Pulmonary Disease Section of our Department of Internal Medicine. Subsequently, he became Chief of the Pulmonary Disease Section at the VA Hospital in Tucson. In 1972, he accepted responsibility for Ambulatory Care and General Internal Medicine at the College and as Assistant Chief of the VA Hospital's Medical Service. In 1974, he achieved the rank of Professor of Internal Medicine and turned his talents to Administration by serving the College as Associate Dean for Academic Affairs. He has served in that capacity ever since.

Dr. Kettel is a Diplomate of National Board of Medical Examiners. He was certified by the American Board of Internal Medicine in 1962 and re-certified in 1974. He was also certified in his subspecialty of Pulmonary Disease in 1965.

Beyond his medical school responsibilities, Dr. Kettel serves, or has served, as a member of the Policy Committee of the American Lung Association; as president of the Southern Branch of the Arizona Lung Association; as guest editor for such journals as: *Chest*, *American Review of Respiratory Disease*, and *Medical Letter*. He is a member of several professional societies and is the author of numerous publications in the medical literature.

Dr. Kettel and his wife Lois have three children and, in addition to his medical college and home responsibilities, he has continued to participate in such community activities as serving as Chairman of the Board of Education of the Calvary Lutheran Church; as president of that church since 1975; as president of Switchboard, Inc.; and as a member of the Guidelines Committee of the United Way of Tucson.

The University welcomes Dr. Kettel to his responsibilities as Dean of the College of Medicine and is confident that he will serve in that capacity with distinction.

Merlin K. DuVal, M.D.

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## Auxiliary Highlights

Flash! $16,000.00 has been authorized for transfer to the University of Arizona School of Medicine from the Hamer Educational Loan Fund. The grant is to be used as an emergency fund administered by the University for the purpose of undesignated use by medical students who would be expected to reimburse the fund when possible.

Due to the low demand on the Auxiliary fund from nurses and allied health trainees, as well as continuing problems of collection of outstanding loans, the university grant action was authorized at the fall board meeting of the Auxiliary which had been considering the modification of the fund's purpose for some time.

The medical student grant does not preclude availability of loans to qualified students from other health fields, but the reduced number of requests from them is expected to continue. Use of the grant funds will be reported to the Auxiliary annually, and it is anticipated that the fund will perpetuate itself more successfully with the new plan.

Mrs. Melvin W. (Jean) Phillips
Auxiliary Editor

## *Correspondence*

To the Editor
Arizona Medicine

Dear Sir:

A caveat for those members joining the Association's forthcoming South American Adventure, who are urged in the brochure to "sip a pisco sour" at poolside in Peru.

We have not as yet identified all of the secret ingredients in the pisco sour. So far all we know is what makes it sour.

Work is underway to determine the origin of the name of this libation. We are able to report at this time that it is not derived from "E*pisco*palian".

Sincerely,
Paul B. Jarrett, M.D.

## *The Business of Medicine*

# Tax Shelters: Fact Or Fantasy?

### Part I — Corporate Retirement Plans

Harold Toback, CPA

Starting with this issue of ARIZONA MEDICINE a series of articles dealing with financial and legal matters of interest to physicians will be presented. It is hoped that the articles, which of necessity will have to be general, will spark an interest in the readership. Questions to the editors are encouraged and will be published with answers in the ensuing issues. Topics to be covered in this special series will include estate conservation, insurance, delinquent accounts, medical-legal testimony and contracts. Additional columns will depend on reader interest.

Marvin H. Bendau, Esq.
Harold Toback, C.P.A.

With the enactment of the Tax Reform Act of 1976 the rules regarding tax shelters have changed. As a result, tax shelters which were structured so that investors could get three to four times their initial investment have now been changed so that deductions are limited to the actual amount of cash invested plus *recourse* debt in most instances. The only tax shelter which was left untouched by the new law is real estate which is still not subject to the new "at risk" provisions. (See Part II of series).

In essence the old tax law spawned many "tax shelters" which were in reality just gimmicks in order to postpone the payment of taxes. In the process of postponement the promoters of many of these plans received considerable remuneration while the investor ultimately had to pay his rightful share of taxes ultimately. Unfortunately, it was not always possible to roll over these kind of shelters to avoid the payment of tax and thus the "tax shelters" were really misnomers.

With these major changes in tax la
concerning tax shelters, a re-evaluati
of one's position should be undertaken.
key rule in investing any money is th
you should have safety, a decent retur
and, in addition if possible, some t
advantages.

It is our position that practically
physicians, except those who are ju
beginning practice, should be incorpora
ed. Although there are other advantag
such as deductions for medical expense
disability insurance, etc., the most in
portant reason to incorporate is to g
the benefits of a retirement plan, whi
we feel is the best tax shelter availabl
There are different types of plans wi
differing results.

The profit sharing plan has a deducti
limitation of 15% of salary. While it has
distinct benefit of being elective, that i
you may decide not to make a contrib
tion in any particular year which can b
carried forward to future years, w
rarely recommend profit sharing plans
professionals because of the 15% limit
tion on contributions. However, in co
junction with other types of plans en
merated below, profit sharing plans ca
be a helpful addition.

Defined contribution plans have a co
tribution limitation of 25% of salary an
contributions are mandatory each yea
This type of plan is generally recon
mended for younger physicians. In co
trast, defined benefit plans have a benef
limitation of approximately $81,000, an
are suitable for older physicians wh
have fewer years in which to build the
retirement nest-egg.

Pension plans should invest in the mos
conservative and safe investments. A
such, a great deal of thought and co
sideration should be given to the plac
ment of funds in these plans. This mone
can be invested in stocks, bonds, saving
accounts, real estate or any other pr
dent investment. The income from thes
investments builds up tax-free and a
retirement, the money can be paid eithe
in a lump sum or installments and ar

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From: Reprint requests to: Toback, Rubenstein, Feldman, Murray & Freeman, P.C. 3550 North Central Avenue, Phoenix, Arizona 85012 axable when received. The advantage of his procedure is that while your earning ower is at its highest, you reduce your axes through the pension plan contribution and pay taxes on that money when ou are retired, presumably when your arning power and tax rates are lower. he importance and significance of the ension plan to the physicians' overall nancial planning can be best appreciated y noting that funds put away tax-free ith an average 8% earning rate, will be oubled over a nine year period.

Employees are covered in the plan if hey work over 1,000 hours per year. You an also limit contribution to those age 25 r older. You may also "integrate" the lan with Social Security which effectively reduces contributions and benefits or employees earning under $16,500. arying "vesting" schedules allow for mployees (including physicians) to have omplete or partial control of their funds vhen and if they are separated from mployment. An increasing degree of ontrol over a 5-10 year period can be pecified in the plan at inception.

Participants in a plan may borrow from heir accounts at interest rates that they would have to pay banks and the borrower has to secure the loan with proper ollateral. One great benefit of a corporate retirement plan is that the funds are ot subject to estate taxes if paid out in wo taxable years or more and if the eneficiary you name is someone other han your estate.

The key in determining how much money can be placed in a pension plan in any one year depends upon the amount of money that your corporation has made and the amount of money that you need to live on and to pay taxes on. Anything left over can be put away into such a plan. For instance, if your net income from your practice is $60,000 and you can live on $40,000, you should be able to contribute $20,000 to a retirement plan. Obviously individual differences make any generalized statement difficult and the advice of an attorney, accountant, actuary, investment and insurance advisor are all needed in order to place your individual position in proper perspective.

In summary, to answer the question whether tax shelters are "fact or fantasy" one has to consider the different varieties of shelters available. Part I of this series has considered the corporate retirement plans. It is our belief that the corporate retirement plans are probably the safest and most important tax shelter available to the physician today.

# *ArMA Reports*

## HEALTH MANPOWER COMMITTEE

Meeting of the Health Manpower Committee of the Arizona Medical Association, Inc., held Wednesday, July 13, 1977, at 810 W. Bethany Home Road, Phoenix, convened at 6:40 p.m., Luis C. Kossuth, M.D., Chairman, presiding.

### Study on Arizona Physicians

Report on Arizona Physicians and spouses prepared by Thomas J. Stewart, Ph.D., Medical University of South Carolina, was distributed to the Committee and summarized by Dr. Kossuth. Dr. Stewart will be encouraged to submit an article to *Arizona Medicine* covering his interesting report.

### Arizona Health Service Corps

Updated status report on the Corps was presented by Dr. Kossuth.

### Arizona Rural Health Conference

Dr. Kossuth reported on the conference referring to his previously circulated written report, as well as fiscal information indicating a large number of unpaid registrants. The committee was asked to keep this information in mind pending request for funding of a 1978 conference.

Mr. Wagner suggested the conference might be held at a time when legislators could attend.

### Senate Bill 1372

Mr. Turkian of the Arizona Department of Health Services indicated the Department would welcome assistance in implementation of the subject bill — first step being development of criteria for determining need for health services in remote areas of the State. Consideration must be given to the taxation potential of communities, or some alternatives to self-support be developed.

### Upward Mobility

Dr. Kossuth reported on a present movement to establish a Master's Degree Program for Family Nurse Practitioners at the University of Arizona, and problems this might create for nurses who receive their R. N. through community college programs. It was decided to offer to participate if a committee should be formed to develop such a program.

### Physician Extenders

In discussion of future activity of this Committee, physician extenders emerged as a major point of interest. It was decided to devote the next meeting of the Committee to an in-depth discussion of Physician's Assistants/Nurse Practitioners/etc. Focus will be on how best to utilize these personnel, how to develop more interest on the part of Arizona physicians, what ArMA's role should be, etc. Input will be solicited from physicians employing physician extenders concerning their experience and suggestions for more effective use of these persons.

Meeting adjourned 9:15 p.m.

## SCIENTIFIC ASSEMBLY COMMITTEE

The meeting of the Scientific Assembly Committee of the Arizona Medical Association, Inc., held at 810 W. Bethany Home Road, Phoenix, Arizona on Saturday, August 20, 1977 convened at 1:12 p.m., Richard A. Silver, M.D., Chairman, presiding.

### VICE-CHAIRMAN

IT WAS MOVED AND CARRIED TO ELECT MARVIN C. SCHNEIDER, M.D. AS VICE-CHAIRMAN OF THE COMMITTEE WITH THE UNDERSTANDING THAT HE IS TO SERVE AS CHAIRMAN FOR THE 1979 MEETING.

### FUTURE MEETINGS

1978 — Confirmed at Tucson Community Center and Marriott Hotel for April 25-29, 1978.

1979 — Confirmed at Safari Hotel, Scottsdale, for April 24-29, 1979.

1980 — IT WAS MOVED AND CARRIED TO RECOMMEND TO THE BOARD OF DIRECTORS THAT THE 1980 MEETING BE HELD AT THE SCOTTSDALE REGISTRY HOTEL (PRESENTLY UNDER CONSTRUCTION) ON APRIL 23-27, 1980.

### FACULTY FOR 1979 MEETING

IT WAS MOVED AND CARRIED TO INVITE, IN ORDER LISTED, ONE OF THE FOLLOWING SCHOOLS TO PROVIDE THE CORE FACULTY FOR THE 1979 MEETING.

1. University of Kansas School of Medicine
2. University of Colorado School of Medicine
3. University of Iowa College of Medicine

### REVIEW OF 1977 MEETING

Dr. Silver led an extensive discussion regarding the 1977 meeting showing the attendance report of ArMA members as follows: See page 784.

It was understood that should this format be approved by the Board of Directors, every attempt would be made to implement the new schedule as soon as possible, consistent with existing hotel commitments, but in no case later than the 1980 meeting.

**Public Relations Report**

The 102 page report on the Public Relations activities of the 1977 meeting was reviewed by the committee.

**Registration Fees for House of Delegates**

The matter of delegates who do not attend the scientific portion of the program was discussed at great length with many different ideas expressed. Correspondence from the Board of Directors and Pima County Medical Society was reviewed culminating in the following action.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE BOARD OF DIRECTORS THAT THEY SET A REGISTRATION FEE OF $10 FOR MEMBERS OF THE HOUSE OF DELEGATES WHO PARTICIPATE ONLY IN THE HOUSE OF DELEGATES MEETINGS.

### CALIFORNIA COLLEGE OF MEDICINE-UNIVERSITY OF CALIFORNIA, IRVINE

Dr. Silver indicated that he would soon be meeting with Robert C. Combs, M.D., Associate Dean, Continuing Medical Education, of the subject school to work out the

## ATTENDANCE REPORT

| Year | Attend | Members | % | Location |
|---|---|---|---|---|
| 1977 | 498 | 2,556 | 19.4 | Hyatt Regency - Phoenix |
| 1976 | 704 | 2,471 | 28.5 | Safari Hotel - Scottsdale |
| 1975 | 459 | 2,393 | 19.2 | Braniff Hotel - Tucson |
| 1974 | 660 | 2,232 | 29.6 | Safari Hotel - Scottsdale |
| 1973 | 654 | 2,079 | 31.5 | Safari Hotel - Scottsdale |
| 1972 | 550 | 1,866 | 29.5 | Safari Hotel - Scottsdale |
| 1971 | 390 | 1,745 | 22.4 | Safari Hotel - Scottsdale |
| 1970 | 377 | 1,669 | 22.6 | Safari Hotel - Scottsdale |

The survey of the membership who did not attend the 1977 meeting resulted in the following responses to the ten questions asked:

| A<br>No. Question | No of Responses |
|---|---|
| 1. The cost of staying at the headquarters hotel was too high | 35 |
| 2. The scientific program subjects were of no interest to me | 77 |
| 3. I prefer meetings that are held in resort hotel locations | 64 |
| 4. I had to cover my practice so that my associate could attend | 39 |
| 5. The basic registration fee was too high | 59 |
| 6. I had another meeting which I attended | 44 |
| 7. The meeting conflicted with my personal vacation | 14 |
| 8. I did not like the downtown hotel location | 68 |
| 9. I never attend state conventions | 32 |
| 10. The cost of parking prevented me from attending | 19 |

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE BOARD OF DIRECTORS THAT THE GENERAL FORMAT OF THE MEETING BE CHANGED TO THE FOLLOWING:

| | | |
|---|---|---|
| Wednesday | A.M. | Board of Directors meeting followed by House of Delegates First Meeting |
| | P.M. | Reference Committees |
| Thursday | A.M. | Socio-Economic Programs for members and spouses |
| | P.M. | Golf, tennis, etc. |
| | Evening | Steak Fry type social function |
| Friday | A.M. | House of Delegates - Second Meeting |
| | P.M. | Scientific Program |
| | Evening | ArMPAC Banquet |
| Saturday | A.M. | Scientific Program starting with 7 A.M. breakfast panel |
| | P.M. | Scientific program |
| | Evening | President's Banquet |
| Sunday | A.M. | Scientific Program starting with 7 A.M. breakfast panel |
| | Noon | Convention closes |

proposal for the 1978 meeting.

General discussion ensued on the many possible aspects of the program about which Dr. Silver would discuss with Dr. Combs.

### NEXT MEETING

It was determined to tentatively schedule the next meeting for October 15, 1977 subject to receipt of recommendations from Dr. Combs.

### CME SURVEY

Mr. Robinson reported on the CME Survey conducted during the 1977 meeting and indicated that the proposal to have ArMA approved as an accrediting agency is now before the appropriate AMA committee for consideration.

Meeting adjourned 4:18 p.m.

## HEALTH MANPOWER COMMITTEE

Meeting of the Health Manpower Committee of the Arizona Medical Association, Inc., held Wednesday, September 14, 1977, at 810 West Bethany Home Road, Phoenix, convened at 7:00 p.m., Louis C. Kossuth, M.D., Chairman, presiding.

### Nurse Practitioner Education

Letter of 7/22/77 from Dean Sorensen, College of Nursing at the University of Arizona, in response to our offer of assistance in developing curricula, received for information.

### Osteopathic Study on Rural Practitioners

Recent edition of an ongoing study begun 12 years ago by the Arizona Osteopathic Medical Association was reviewed briefly. The study addressed itself to the reasons why physicians do not settle in the smaller communities of Arizona — Received for information.

### Inventory of Selected Health Professionals

Copies of the subject booklet published by the Arizona Department of Health Services were distributed to the Committee for their review.

### Information Articles

Received for information were the following two items:

1. "How to Identify a Town's Medical Needs" — from Medical News section of *JAMA* 8/1/77, report of an interest study by a young public health physician

2. "Disappearing Doctors" — from *Wir peg Free Press*, Winnipeg, Manitoba, C ada, August 1977, pointing up the exodus doctors from Canada as a result of sociali medicine.

### 7th Annual Arizona Rural Health Conference

Dr. Kossuth reviewed several docume concerning planning and evaluation of 6th Annual Conference held in March 19 and summarized by asking the will of Committee concerning funding of fut conferences. Discussion ensued, with vari suggestions offered. The following act resulted:

IT WAS MOVED AND CARRIED RECOMMEND TO THE PLANNI COMMITTEE FOR THE 7TH ANNU RURAL HEALTH CONFERENCE TH BY THE NEXT MEETING OF T HEALTH MANPOWER COMMITT THEY HAVE A PROPOSED AIM A EXPECTED RESULT, AS WELL AS PROPOSED BUDGET; OTHERWI THE RECOMMENDATION WILL THAT THE ARIZONA MEDICAL ASS CIATION NOT CONTRIBUTE FINA CIALLY TO THE CONFERENCE.

### Physician Extenders

Letter of 8/16/77 from Louis J. Kett M.D., Acting Chairman, Joint Board, w coming input from this Committee implementation of S.B. 1372 was receiv

The Committee reviewed letters fr twenty-five physicians employing phy cian's assistants, which contained ma helpful suggestions for better implemen tion of these personnel.

The following recommendations w agreed upon to be forwarded to the Jo Board if approved by the ArMA Board Directors.

**Qualifications**

1. National Certification, which requi passing National Board exams. Exceptic could be made at the discretion of the Jo Board.

2. Submission to the Joint Board of complete description of duties and respon bilities of the physician's assistant.

3. The Joint Board contact the cou medical society of the county in which t physician's assistant is to be employed, fo recommendation as to the ability of t applying physician to appropriately sup vise a physician's assistant.

**Direction**

1. The physician's assistant should at times be under the supervision or direction a physician.

2. Extent of records and frequency review should be established by the Joi Board.

3. There should be a communication lin age between physician and physicia assistant at all times. The Joint Boa should establish contact time.

**Drugs**

Formularies should be developed by t supervising or directing physician containi lists of drugs -

1. Drugs which may be used.
2. Drugs which may be used on directi by the physician.
3. Drugs which may be prescribed.

. Drugs which may be prescribed on direction by the physician.

or 3 and 4 appropriate notation will be de concerning refills.

### Arizona Health Service Corps

Vard Studt, M.D., Program Coordinator, orted status of the Corps. They are rently awaiting approval of a contract for second year from the National Health vice Corps.

### Emergency Medical Manpower

Mr. Wagner submitted an information de on the Emergency Paramedic Program the Arizona Department of Health Ser- es for review by the Committee.

## AD HOC COMMITTEE ON HEALTH CARE COST

The meeting of the Ad Hoc Committee on alth Care Cost of the Arizona Medical sociation, Inc., held Thursday, September 1977 at 810 West Bethany Home Road, oenix, Arizona, convened at 7:09 p.m., bert E. Hastings, M.D., Chairman, pre- ing.

### MINUTES

### Purpose of Ad Hoc Committee on Health Care Cost

Dr. Kahle explained to the Committee that number of individuals and organizations cluding the AMA and the ArHA have pressed an extreme interest in the rising st of health care; that members of the izona Legislature have indicated that they ll study "cost containment" during the xt regular session and perhaps appoint an erim committee to study the rising cost of alth care and make recommendations as to w best to contain the cost. Physicians ıst play a major role in studying this oblem, thus the Board of Directors ap- inted the Ad Hoc Committee to study the st of health care in Arizona and make propriate recommendations to the Arizona gislature and other interested organiza- ns.

### Arizona Legislature

Representative Diane McCarthy, Chair- an, House Health Commiteee informed the mmittee that in her opinion there is little ance that the legislature will adjourn the xt session without having addressed the oblem of an (1) alternative to medicaid, (2) tastrophic insurance program, independent all other types of coverage and, (3) health re cost control. It is anticipated that the ouse Health Committee will start having eekly sessions in early October to develop commendations for introduction to the gislature in January 1978. They will invite e insurance industry, the consumers as ell as the Hospital Association and Medical ssociation to participate. CONSIDER- BLE DISCUSSION ENSUED WITH RS. McCARTHY.

### Assignments

The Committee discussed several areas at should be investigated prior to develop- g a position or making recommendations to e legislature. Dr. Hastings, proposed that ch member of the Committee be respon- ble for a given area to be considered. ssignments were made as follows to be nsidered during the next meeting.

1. Catastrophic Insurance Program.
   Laurence Linkner, M.D.
2. Physician Education — Cost of Health Care —
   W. Scott Chisholm, M.D.
3. Health Insurance Industry — incentives.
   Don Schaller, M.D., & Richard Switzer, M.D.
4. Ambulatory Care Facilities - incentives.
   Wallace A. Reed, M.D.
5. Public Relations and Consumer Education.
   Ronald Christ, M.D.
6. Quality of Care.
   John Oakley, M.D.
7. Impact on Cost of Regulations by Governments.
   T. Abner Huff
8. Physician Impact on Cost of Hospitalization, measurement?
   Arthur Nelson, M.D.
9. Analysis of Cost (Gross National Product).
   T. Abner Huff

### Next Meeting

It was determined that the Committee would meet again on September 29, 1977.

## *Future Medical Meetings*

### CONTINUING MEDICAL EDUCATION

THE FOLLOWING INSTITUTIONS AND ORGANIZATIONS HAVE RECEIVED ACCREDITATION FOR CONTINUING MEDICAL EDUCATION FROM THE COUNCIL ON MEDICAL EDUCATION OF THE AMA

ARIZONA STATE HOSPITAL PHOENIX
DESERT SAMARITAN HOSPITAL MESA
GOOD SAMARITAN HOSPITAL PHOENIX
HEALTH MAINTENANCE ASSOCIATES
PHOENIX INDIAN MEDICAL CENTER
MARICOPA COUNTY GENERAL HOSPITAL PHOENIX
MEMORIAL HOSPITAL PHOENIX
ST LUKES HOSPITAL AND MEDICAL CENTER PHOENIX
ST JOSEPH HOSPITAL AND MEDICAL CENTER PHOENIX
TUCSON HOSPITAL MEDICAL EDUCATION PROGRAM TUCSON
U OF A HEALTH SCIENCES CENTER
VETERANS ADMINISTRATION CENTER PRESCOTT
VETERANS ADMINISTRATION HOSPITAL PHOENIX

The accredited institutions and organizations above produce a variety of continuing medical education programs Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category I credit Physicians who participate in programs which are designated Category I by accredited institutions will receive Category I credit toward the ArMA Certificate in CME and the AMA's Physicians Recognition Award

## DECEMBER

### AMERICAN COLLEGE OF SURGEONS MEETING

December 2-3, 1977. Doubletree Inn. Tucson, AZ. Sponsor: American College of Surgeons. Contact: Peter J. Whitney, M.D., B. W. Simons, Jr., M.D., 310 N. Wilmot Rd., Tucson, AZ 85711. Approved for 8 required hours toward the ArMA Certificate in Continuing Medical Education.

### CULTURE AND NUTRITION IN THE REPRODUCTIVE CYCLE

December 2, 1977. Scottsdale Center for the Arts, Scottsdale, AZ. Sponsor: Nutrition Council of AZ, Professional Education Prog. Contact: Junetta Barrett, Dir. Food and Nutrition Division, 1535 W. Jefferson, Phoenix, AZ 85004. Approved for 5 required hours toward the ArMA Certificate in Continuing Medical Education.

### COMBINED GRAND ROUNDS

December 7, 1977, St. Joseph's Hospital. Sponsor: Family Practice Residency Programs of St. Joseph's, Good Samaritan, and Scottsdale Memorial Hospitals. Contact: Ann Larsen, R.N., Program Coordinator, Family Practice Residency Program, St. Joseph's Hospital and Medical Center, Phoenix, AZ 85013. Approved for required hours toward the AMA Certificate in Continuing Medical Education.

### ALL-DAY CLINICAL CONFERENCE IN OPHTHALMOLOGY

December 9, 1977. Health Sciences Center, #5403, U of A Tucson, AZ. Sponsor: Dept. of Surgery/Div. of Ophthalmology, U of A Health Sciences Center. Contact: H. E. Cross, M.D. Dept. of Surgery/Div. of Oph., U of A Health Sciences Center, Tucson, AZ 85724. Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

### THE PHYSICIAN AS COUNSELOR IN MARRIAGE AND SEXUAL DYSFUNCTIONS.

December 9 & 10, 1977. Plaza International Hotel, Tucson, AZ. Sponsor: Department of Continuing Medical Education. Contact: Anthony F. Vuturo, M.D., U of A Health Sciences Center, Tucson, AZ 85724. Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

### ARIZONA OPHTHALMOLOGIC SOCIETY

December 10, 1977. Skyline Country Club, Tucson, AZ. Sponsor: Arizona Ophthalmologic Society. Contact: Richard S. Kanter, M.D., 1601 N. Tucson Blvd., Tucson, AZ. Approved for 3½ required hours toward the ArMA Certificate in Continuing Medical Education.

### INTRODUCTION TO SEXUALLY TRANSMITTED DISEASES

December 12 & 13, 1977. Gallup, New Mexico. Sponsor: Center For Disease Control, Dept. of HEW, Social Hygiene Branch, Navajo-Hopi-Zuio-Ute Health Areas. Contact: Ray M. Bayles, Box 1337, Gallup, N.M. 87301. Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education.

### PEDIATRIC ORIGINS OF CHRONIC LUNG DISEASE

December 14, 1977. Yuma Regional Medical Center, Yuma, AZ. Sponsor: Arizona Health Sciences Center, Contact: R. Cannell, M.D., 2451 Ave. A & Eight, Yuma, AZ. Approved for 1 required hour toward the ArMA Certificate in Continuing Medical Education.

## JANUARY

### RUIDOSO MEDICAL SYMPOSIUM "DERMATOLOGICAL PROBLEMS OF THE FAMILY PHYSICIANS".

Inn of the Mountain Gods, Mescalero, N.M. Sponsor: New Mexico Academy of Family Physicians. Contact: Albuquerque Academy of Family Physicians, 2650 Yale, S.E., Albuquerque, N.M. 87106. Approved for 4 required hours toward the ArMA Certificate in Continuing Medical Education.

### BREAST CANCER UPDATE: SCREENING AND MANAGEMENT.

January 14, 1978. Doubletree Inn, Tucson, AZ. Sponsor: Office of CME, U of A Health Sciences Center. Contact: Anthony F. Vuturo, M.D., Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 5 required hours toward the ArMA Certificate in Continuing Medical Education.

### PEDIATRIC UPDATE 1978

January 16-19, Doubletree Inn, Scottsdale, AZ. Sponsor: Dept. of Pediatrics of St. Joseph's Hospital and Medical Center, Phoenix, AZ. Contact: Melvin L. Cohen, M.D., Dept. of Pediatric Education, St. Joseph's Hospital and Medical Center, 350 W Thomas Road, Phoenix, AZ 85013. Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education an A.A.F.P. credits.

### FIFTH ANNUAL BARROW NEUROLOGICAL INSTITUTE SYMPOSIUM,

January 19-21, 1978. Camelback Inn, Phoenix, Az. Sponsor: Barrow Neurological Institute of St. Joseph's Hospital & Medical Center. Contact: Richard A. Thompson, M.D., Barrow Neurological Institute, 350 W. Thomas Rd., Phoenix, AZ 85013.

### 4th ANNUAL SPORTS MEDICINE SYMPOSIUM

January 21, 1978, 8 a.m. to 5 p.m. Safari Hotel, Scottsdale, AZ 85252. Sponsor: Arizona Medical Association, Inc. Contact: Paul Steingard, D.O. or William Brainard, M.D., Arizona Medical Assoc. Inc., 810 W. Bethany Home Rd., Phoenix, AZ 85013. Approved for 8 required hours toward the ArMA Certificate in Continuing Medical Education.

### 21ST ANNUAL CARDIAC SYMPOSIUM

January 20-21, 1978. Mountain Shadows Resort, Scottsdale, AZ. Sponsor: American Heart Association, Arizona Affiliate. Contact: Gordon Ewy. M.D., 1445 East Thomas Rd. Phoenix, AZ 85014. Approved for 10 required hours toward the ArMA Certificate in Continuing Medical Education.

### SOUTH AMERICAN MEDICAL SEMINAR

January 29 to February 7, 1978. Lima, Peru & Quito, Equador. Sponsor: International Seminars. Contact: Wei-Ping Loh, M.D., Ph.D., 120 S. Central Ave., St. Louis, Missouri 63105. Approved for hour elective hours toward the ArMA Certificate in Continuing Medical Education.

## FEBRUARY

### AAFP ANNUAL MEETING 1978

February 1-4, 1978. Doubletree Inn, Scottsdale, AZ. Sponsor: Arizona Academy of Family Physicians. Contact: Mrs. June Boykin, 1027½ E. Camelback Rd., Phoenix, AZ 85014. Approved for required hours toward the ArMA Certificate In Continuing Medical Education.

### GYNECOLOGIC ONCOLOGY AND SLIDE SEMINAR

February 4-5, 1978. Marriott Hotel, Tucson, AZ. Sponsor: Arizona Society of Pathologists. Contact: Executive Secretary, Arizona Society of Pathologists, 810 W. Bethany Home Rd., Phoenix, AZ 85013. Approved for 7 required hours toward the ArMA Certificate in Continuing Medical Education.

### SOUTHWESTERN SEMINAR ON NEUROMUSCULAR DISORDERS IN CHILDREN

February 17-18, 1978. Health Sciences Center, Main Auditorium, Tucson, AZ. Sponsor: U of A Health Sciences Center Dept. of Neurology. Contact: Lawrence Z. Stern, M.D., Dept. of Neurology, U of A Health Sciences Center, Tucson, AS 85724. Approved for 9 required hours toward the ArMA Certificate in Continuing Medical Education.

### ARIZONA SOCIETY OF ANESTHESIOLOGISTS ANNUAL MEETING

February 25 & 26, 1978. Scottsdale Hilton Hotel, Scottsdale, AZ. Sponsor: Arizona Society of Anesthesiologists. Contact: Casey D. Blitt, M.D., Dept. of Anesthesiology, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 9 required hours toward the ArMA Certificate in Continuing Medical Education.

## MARCH

### VALLEY OF THE SUN DERMATOLOGIC SYMPOSIUM

March 2-5, 1978. Casa Blanca Inn, Scottsdale, AZ. Sponsor: Phoenix Dermatological Society, & University of Arizona. Contact: Dr. Fillmore K. Bagatela, Dr. Peter J. Lynch, 333 E. Virginia, Phoenix, AZ. Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

### DAY OF HEMATOLOGY

March 3, 1978, Camelback Inn, Scottsdale, AZ. Sponsor: St. Joseph's Hospital and Medical Center, Phoenix, AZ. Contact: Ethelanr Murray, M.D., St. Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, AZ 85013. Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

### THE SECOND NATIONAL CONFERENCE ON OTITIS MEDIA

March 3-5, 1978, Doubletree Inn, Scottsdale AZ. Sponsor: Univ. of Arizona College o Medicine and the Indian Health Service. Contact. Office of Continuing Medical Educatio and Outreach, University of Arizona Colleg of Medicine, Tucson, AZ 85724. Approved fo 17.5 required hours toward the ArMA Certificate in Continuing Medical Education.

### NEW MEXICO METABOLISM SYMPOSIUM

March 9, 10 & 11, 1978. Taos, Ne Mexico. Sponsor: Taos, New Mexico Sponsor: Taos Metabolism Symposium Contact: Office of Education, Lovelace Bataan Medical Center, Albuquerque, Ne Mexico.

### PURGATORY COLORADO MEDICAL SK SYMPOSIUM. "GERIATRICS: Diagnosi and Treatment".

March 10-11, 1978. Durango, Co. Sponsor New Mexico Academy of Family Physicians. Contact: Albuquerque Academy o Family Physicians, 2650 Yale, S.E., Albuquerque, N.M. 87106. Approved for required hours toward the ArMA Certificate in Continuing Medical Education

### 2ND ANNUAL SEMINAR, CURRENT CONCEPTS OF HYPERTENSION.

March 11-12, 1978. Scottsdale Registr Resort, Scottsdale, AZ. Sponsor: Healt Maintenance Associates. Contact: Dr. L A. Oslen, Health Maintenance Associates 4747 N. 22nd St., Phoenix, AZ 85016 Approved for 10 required hours toward th ArMA Certificate in Continuing Medica Education.

### CURRENT CONCEPTS IN CEREBROVASCULAR DISEASE.

March 11-18, 1978. Sun Valley Inn, Su Valley, Idaho. Contact: Margo Walter Administrative Assistant, Office of Continuing Medical Education and Outreach U of A Health Sciences Center, Tucson AZ 85724. Approved for 22.5 require hours toward the ArMA Certificate i Continuing Medical Education.

### CURRENT CONCEPTS IN CEREBROVASCULAR DISEASE.

March 11-19, 1978, Sun Valley Inn, Su Valley, Idaho. Sponsor: Office of Continuing Medical Education & Dept. o Surgery, U of A. Contact: Jerry Goldstone, M.D. & Wesley S. Moore, M.D., U of A Health Sciences Center, Tucson, AZ 85724. Approved for 22.3 required hours toward the ArMA Certificate in Continuing Medical Education.

### GASTROENTEROLOGY FOR CLINICIAN — 1978

March 13-15, 1978. Del Webb's Towne House, Phoenix, AZ. Sponsor: America College of Gastroenterology & the Institute of Gastroenterology, Good Samarita

## SOUTHWESTERN CARDIOVASCULAR SYMPOSIUM

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| James Forrester, M.D.<br>Los Angeles, California | Arthur Weyman, M.D.<br>Indianapolis, Indiana |

Registration is $125.00. Participants will receive 18 required hours credit For more information

Richard Mushorn, M.D., Program Chairman or Robert J. Lundin II, Director, Public Relations
St. Luke's Hospital Medical Center, 525 North 18th Street, Phoenix, Arizona 85006 • (602) 258-7373

ospital. Contact: David C. H. Sun, M.D., ood Samaritan Hospital, Phoenix, AZ 5036. Approved for required hours ward the ArMA Certificate in Continuing ledical Education.

### APRIL

**SSUES IN CRITICAL CARE MEDICINE**
pril 8, 1977. Arizona State University. ponsor: Desert Samaritan Hospital, Conact: L. A. Rosati, M.D., Dept. of Path., esert Samaritan Hospital. Approved for 7 equired hours toward the ArMA Certifiate in Continuing Medical Education.

**ERIATRIC POW-WOW**
pril 7, 8, 9, 1978. Arizona Inn, Tucson, Z. Sponsor: Continuing Medical Educaion, U of A. Contact: A. Vuturo, M.D. Office of Continuing Medical Education nd Outreach, U of A Health Sciences enter, Tucson, AZ 85724. Approved for 6 required hours toward the ArMA ertificate in Continuing Medical Educaion.

**ARIZONA MEDICAL ASSOCIATION 86th ANNUAL CONVENTION.**
April 25-29, 1978, Tucson Community enter and Marriott Hotel, Tucson, AZ. ponsor: Arizona Medical Association, nc. Contact: Mr. Bruce E. Robinson, 810 V. Bethany Home Rd. Phoenix, AZ 85013. pproved for required hours toward the

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November 7-10 7:30-9:30 p.m.
November 14-17 9:30-11:30 a.m.

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555 West Catalina Dr., Ste. 14
Phoenix, AZ 85013
Phone: 374-3514

ArMA Certificate in Continuing Medical Education Detailed program will appear in the March issue of *Arizona Medicine*.

## MAY

### UPDATE: PRIMARY CARE 1978

May 3-6, 1978. Arizona Health Sciences Center Sponsor: U of A Continuing Medical Education. Contact: A. Vuturo, M.D., Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 25 required hours toward the ArMA Certificate in Continuing Medical Education.

## JULY

### 21st ANNUAL RUIDOSO FAMILY PRACTICE SEMINARO

July 17-20, 1978. Headquarters Inn, of the Mountain Gods at Mescalero, New Mexico. Sponsors: New Mexico Chapter of the American Academy of Family Physicians. Contact: Bob Reid, Convention Dir., P. O. Box 456, Sunland Park, N.M. 88063. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

## MONTHLY OR WEEKLY

### OFFICE PSYCHIATRY FOR THE PRIMARY PROVIDER

2nd Monday of month. 4811 N 7th Street, Phoenix AZ Sponsor Arizona Health Plan Contact T R Bittker M D . Box 5000. Phoenix. AZ 85010 Approved for required hours toward the ArMA Certificate in Continuing Medical

### CLINICAL IMMUNOLOGY, ALLERGY AND RHEUMATOLOGY ROUNDS

Every Friday Noon-1 p.m Sponsor U of A College of Medicine. Dept of Internal Medicine. Clinical Immunology Section Contact John Boyer M D . U of A College of Medicine. Tucson. AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### ENDOCRINOLOGY SEMINAR

Every Thursday. Noon-1 p m . 1st. 3rd & 5th Thursday – Rm N318. VA Hospital, 2nd & 4th Thursday. Rm 6505. Tucson Medical Center Sponsor U of A College of Medicine, Department of Internal Medicine, Department of Internal Medicine. Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### HEMATOLOGY-ONOCOLOGY CLINICAL CONFERENCE

Every Tuesday, Noon-1 p.m 1st. 3rd & 5th Tuesdays – Rm 6505. AZ Medical Center 2nd & 4th Tuesdays – Rm N318. Veterans Adm. Hospital. Sponsor U of A College of Medicine, Dept of Internal Medicine Contact Sidney Salmon, M.D , U. of A. College of Medicine, Tucson. AZ 85721. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### GRAND WARD ROUNDS – TRAUMA

Every Tuesday. 8 a.m Arizona Medical Center, Tucson, AZ Sponsor U of A. College of Medicine, Surgery Dept., Trauma Section. Contact Martin Silverstein, M.D., U. of A. College of Medicine. Tucson. AZ 85721 Approved for 1 required-hour per session toward the ArMA Certificate in Continuing Medical Education

### PEDIATRIC GRAND ROUNDS

Every Tuesday, 12:30 p.m. - 1:30 p.m. Alternates between Tucson Medical Clinic and U of A Health Sciences Center. Sponsor U of A College of Medicine, Dept. of Pediatrics. Contact: Hugh Thompson, M.D., 1501 N. Campbell, Tucson, AZ. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### VASCULAR RADIOLOGY

January thru June 1978. 7:30 a.m. to 8:30 a.m. every Friday. Dept. of Radiology. Sponsor: Dept. of Radiology, U of A Health Sciences Center. Contact: I. M. Freundlich, M.D., U of A Health Sciences Center Tucson, AZ 85724. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### PROBLEM CASE WORKSHOPS

3rd Monday of each month 7 30 a m Room 4410. Arizona Medical Center, Tucson, AZ. Sponsor Division of Ophthalmology. U of A College of Medicine. Contact H E Cross. M.D , Ph D , Arizona Medical Center, Dept. of Surgery. Tucson. AZ Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education

### MEDICAL GRAND ROUNDS

Every Wednesday. Noon-1 p.m 1st. 3rd & 5th Wednesday – Staff Conf Rm . VA Hospital 2nd & 4th Wednesday – Rm. 5403. Arizona Medical Center Sponsor U of A College of Medicine. Dept. of Internal Medicine Contact Jay Smith. M D . U of A College of Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### NEUROSCIENCES SEMINAR

Every Friday, 7:30 a.m. U of A Health Sciences Center, Rm. 7505, Tucson, AZ. Sponsor: Dept. of Neurology. Contact: Colin R. Bamford, M.D. & Jose F. Laguna, M.D., Dept. of Neurology, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### NEUROLOGY GRAND ROUNDS

Every Friday, 12 noon. 1st, 3rd & 5th Fridays, U of A Health Sciences Center, Rm. 7505. 2nd and 4th Fridays, Veterans Administration Hospital. Sponsor: U of A Health Sciences Center, Dept. of Neurology. Contact: William A. Sibley, M.D., Dept. of Neurology U of A Health Sciences Center, Tucson, AZ 85724. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### PSYCHIATRIC GRAND ROUNDS

Every Wed., Sept. to May, 4-5:30 p.m. Rm. 84 Arizona Medical Center, Tucson. AZ. Spons U. of A. College of Medicine Dept. of Psych try Contact Alan Levenson, M.D., U of College of Medicine, Tucson, AZ 85721. A proved for 1-1/2 required hour per sessi toward the ArMA Certificate in Continui Medical Education.

### TRAUMA CONFERENCE

Every Thursday, 4-5:00 p.m. Health S ences Center, Rm. 5505, Tucson, A Sponsor: U of A College of Medici Dept. of Surgery. Contact: Martin Silv stein, M.D., Dept. of Surgery, U of Health Sciences Center, Tucson, 85724. Approved for 1 required hour p session toward the ArMA Certificate Continuing Medical Education.

### STAFF EDUCATION CONFERENCE

Wednesdays, Weekly, 1 p.m. Arizona Sta Hospital, Phoenix, AZ. Sponsor Arizona Sta Hospital Contact Howard E. Wulsin, M.D., A zona State Hospital, 2500 E. Van Bure Phoenix, AZ 85008. Approved for 1 requir hour per session toward the ArMA Certificate Continuing Medical Education.

### SURGICAL GRAND ROUNDS

### 4TH TUESDAY OF EACH MONTH

Hospital Auditorium, Baptist Hospital, Phoen Sponsor Baptist Hospital Phoenix. Conta James B. Shields, M.D., 6036 N. 19th Av Phoenix, AZ 85015. Approved for 1-1/2 r quired hours per month toward the ArMA Ce tificate in Continuing Medical Education.

### PATIENT STAFFING CONFERENCE

Three times weekly. Camelback Hospit Phoenix, AZ. Sponsor: Camelback Hospit Contact: Medical Director, Camelback Hosp tal, 5055 N 34th St., Phoenix, AZ 85018. A proved for 1 elective hour per conferen toward the ArMA Certificate in Continui Medical Education.

### PEDIATRIC GRAND ROUNDS

Tuesday 7:30 - 8:30 a.m. in Phoeni
1st Tue. - Phoenix Indian Hospita
2nd Tue. - Maricopa County Hospita
3rd Tue. - Good Samaritan Hospita
4th Tue. - St. Joseph's Hospital
Sponsor: Phoenix Hospital's Affiliate Pediatric Program. Contact: J. Kipp Char ton, M.D., 2601 E. Roosevelt, Phoenix, A 85008. Approved for 1 required hour pe session toward the ArMA Certificate i Continuing Medical Education.

### MONTHLY MEDICAL EDUCATION SEMINAR

Third Monday of the Month, 6:30 p.m., Kiv Conference Room, Phoenix Memorial Hospita Sponsor Medical Staff of Memorial Hospita Contact George Scharf, M.D., 1201 South 7t Avenue, Phoenix, AZ 85007. Approved for required hour per session toward the ArM Certificate in Continuing Medical Education

### COUNTER TRANSFERENCE GROUP

Weekly, Thurs. 8-10 p.m. Sponsor: Phoeni Psychiatric Council. Contact: James E. Camp bell, M.D., 5051 N 34th St., Phoenix, AZ 8501 Approved for 2 required hours toward the ArM

## AMA Challenges in the Courts

One of the profession's major concerns today is government's mounting pressure for increasing regulation of medicine. In response, the AMA has assumed a new position of advocacy for physicians and the public that has resulted in the AMA's first lawsuits against the government.

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Write: Dept. of Membership Development, AMA, 535 N. Dearborn, Chicago, IL 60610 or telephone David B. Weihaupt, Director, (312) 751-6444.

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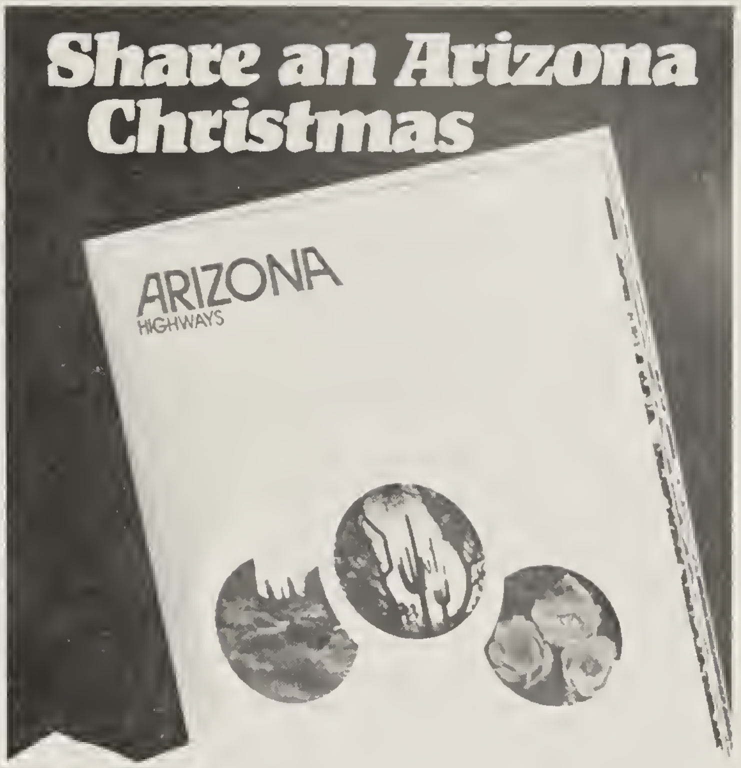

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### DESERT SAMARITAN HOSPITAL

Wednesday Evenings 7 p.m. Sponsor Desert Samaritan Hospital Contact L A Rosati, M.D., Laboratory, Desert Samaritan Hospital, Mesa, AZ 85202. Approved for required hours toward the ArMA Certificate in Continuing Medical Education

### PULMONARY DISEASE GRAND ROUNDS

Mondays—12 Noon D-5 North Conference Rm., Good Samaritan Hospital, Phoenix, AZ. Sponsor Pulmonary Disease Teaching Service, Good Samaritan Hospital Contact Bernard E. Levine, M.D., Pulmonary Function Laboratory, Good Samaritan Hospital, 1033 E. McDowell Hospital, Phoenix, AZ 85006. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### CLINICAL CANCER CONFERENCE

3rd Wednesday every month, Butler Bldg Conference Room, Good Samaritan Hospital, Phoenix, AZ. Sponsor Good Samaritan Hospital. Contact John A Bruner, M.D., 926 E. McDowell Road, Phoenix, AZ 85006 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### TUMOR BOARD CONFERENCE

Every Friday at Noon, Kiva Conference Room, Phoenix Memorial Hospital. Sponsor Phoenix Memorial Hospital Contact Howard Kimball, M.D., 333 West Thomas Road, Phoenix, AZ 85013 Approved for credit toward the ArMA Certificate in Continuing Medical Education

### MONTHLY MEDICAL EDUCATION SEMINAR

Third Monday of the Month, 6 30 p.m., Kiva Conference Room, Phoenix Memorial Hospital. Sponsor Medical Staff of Memorial Hospital. Contact George Scharf, M.D., 1201 South 7th Avenue, Phoenix, AZ 85007 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### MONTLHY MEETING OF TUCSON RADIOLOGISTS

Last Tues. of Month, Plaza International, Tucson, AZ. Sponsor U of A. Medical Center, Dept. of Radiology. Contact. Irwin M. Freundlich, M.D., Arizona Medical Center, Dept. of Radiology, Tucson, AZ 85724. Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

### FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor: Medical Staff. Contact R C Good, M.D., Dir. of Medical Education, 7300 E. 4th St., Scottsdale, AZ Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### MORBIDITY & MORALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor: Medical Staff. Contact. R. C. Good, M.D., Dir. Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12 45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor: Medical Staff. Contact. R. C. Good, M.D., Director of Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor: Medical Staff. Contact' R C Good, M.D., Dir. of Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education

### CARDIOLOGY CONFERENCE

Weekly—Friday 8-9 a.m., St. Mary's Hospital Auditorium, Tucson, AZ. Sponsor. St. Mary's Hospital. Contact A. L. Forte, M.D., St. Mary's Hospital, Tucson, AZ 85724 Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

### GRAND ROUNDS

Each Thursday 7 a.m.-8 a.m., St. Mary's Hospital and Health Center, Sponsor Depts. of Medicine, Surgery, Radiology, Pathology and Family Practice. Contact: Richard Silver, M.D., Chairman, Medical Education and Library Committee, Century Medical Plaza, Suite 160, 1701 West St. Mary's Road, Tucson, AZ 85703. Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

### GI CONFERENCE

(Special Program with U. of A. Consultants) 4th Friday, 1 p.m., T-5 Sponsor VA Hospital Phoenix. Contact Jasper L. McPhail, M.D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### G.I.-RADIOLOGY CLINICAL CORRELATION CONFERENCE

**Each Tuesday, 1 p.m., T-5. Sponsor: VA Hospital Phoenix. Contact: Jasper L.** McPhail, M.D., Veterans Administration Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### GASTROENTEROLOGY CONFERENCE

1st and 3rd Tuesday, 1 p.m., T-5. Sponsor: VA Hospital Phoenix. Contact: Jasper L. McPhail, M.D. VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### CARDIOLOGY CONFERENCE

2nd Thursday, 1 p.m., T-5. Sponsor: VA Hospital Phoenix. Contact: Jasper L. McPhail, M.D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### CLINICOPATHOLOGY CONFERENCE

4th Thursday of 3rd Mo. (Mar., June., Sept. & Dec.), 1 p.m., T-5 Sponsor VA Hospital Phoenix. Contact Jasper L. McPhail, M.D. VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Education.

### MEDICAL-SURGICAL CHEST CONFERENCE

1st and 3rd Thursday, 1 p.m., T-5. Sponsor VA Hospital Phoenix. Contact Jasper L. McPhail, M.D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### CANCER SYMPOSIUM (fomerly Tumor Board)

Each Wednesday, 1 p.m., T-5 Sponsor VA Hospital Phoenix Contact: Jasper L. McPhail M.D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education

### SURGERY-PATHOLOGY CONFERENCE

Each Thursday, 7 a.m., 2128 Sponsor VA Hospital Phoenix. Contact: Jasper L. McPhail, M.D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### DERMATOLOGY CONFERENCE

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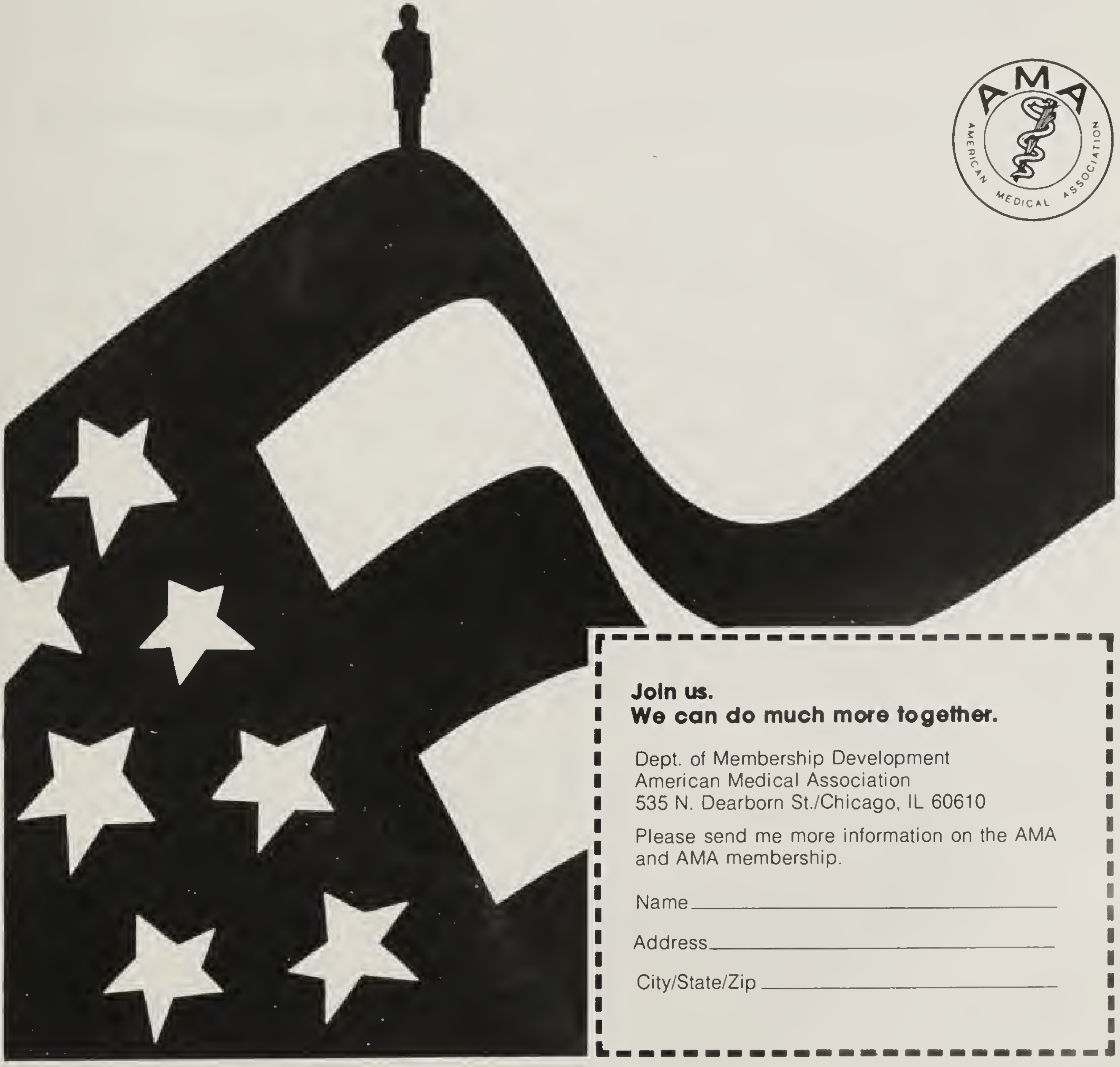

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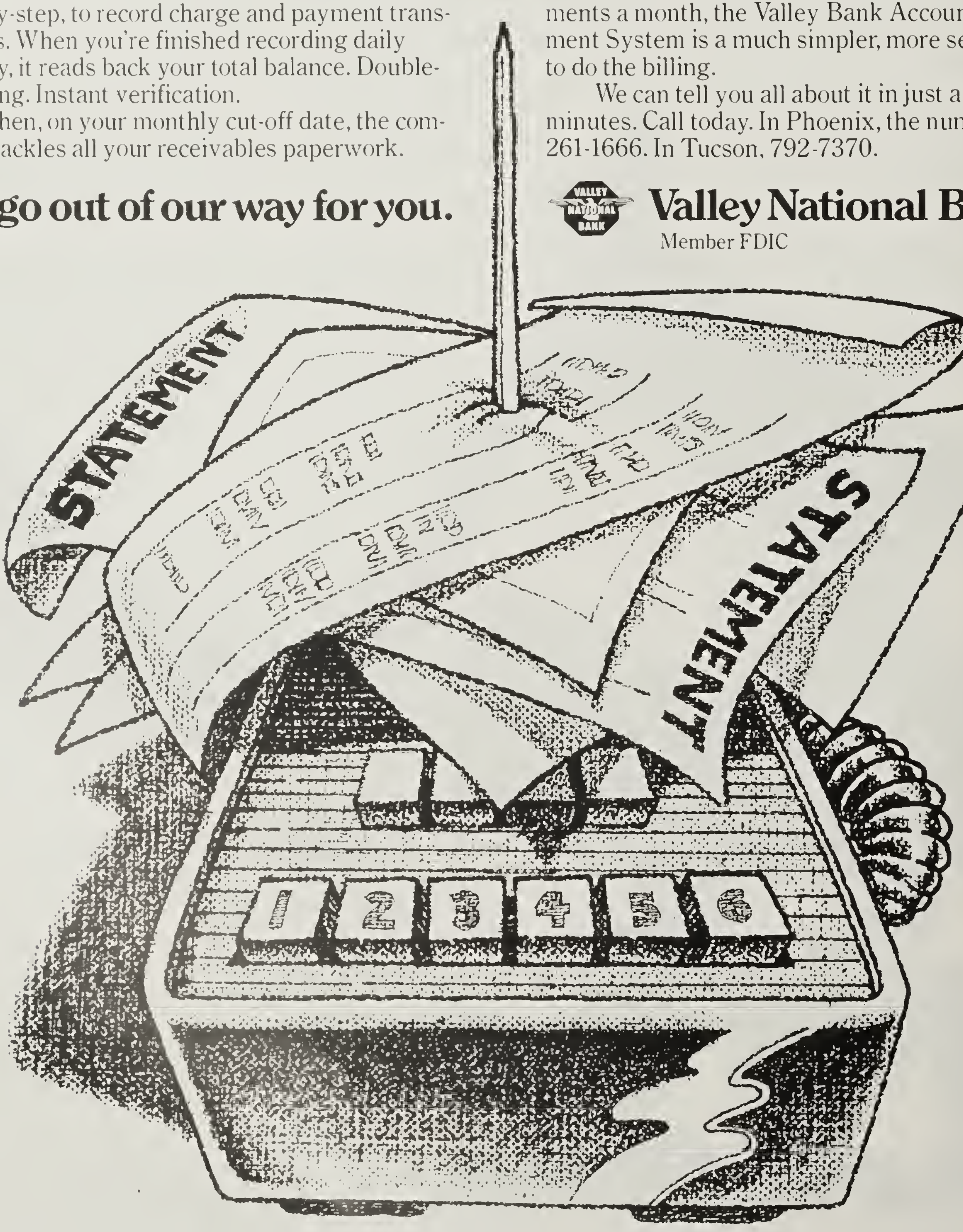

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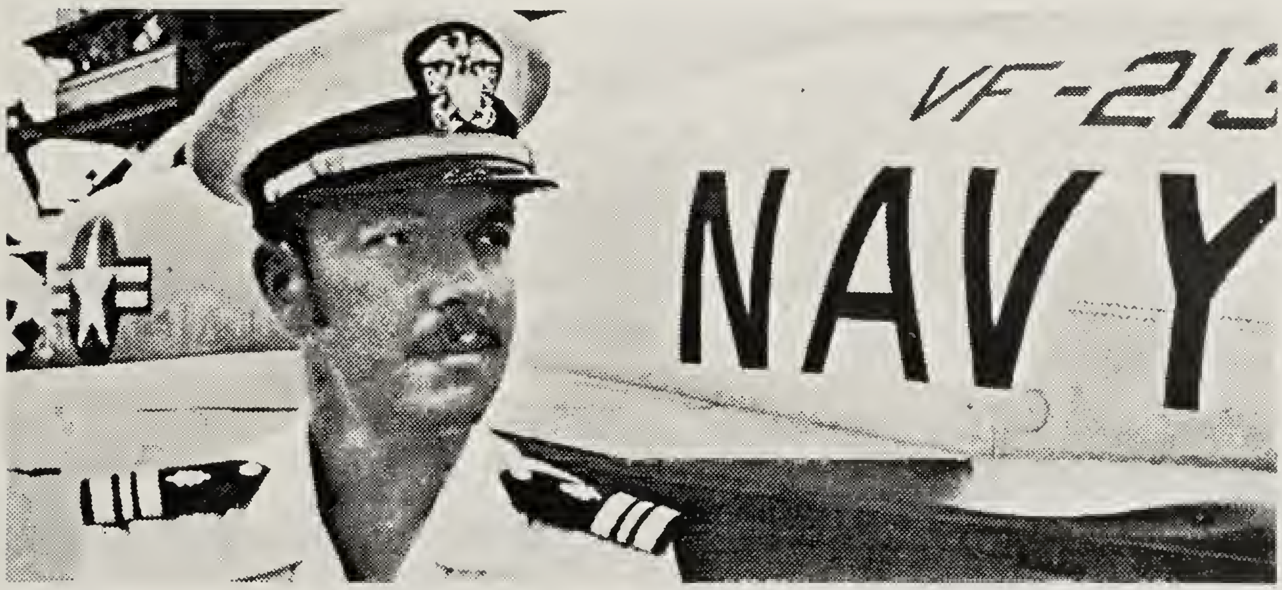

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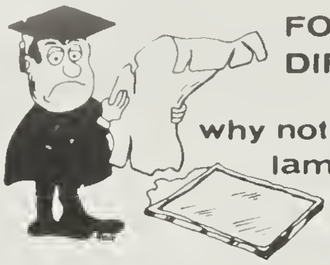

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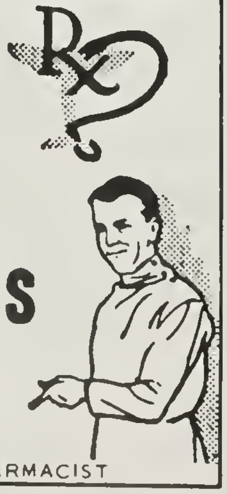

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**Precautions:** Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function.

**Adverse Reactions:** All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L. E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

**Dosage: Not recommended for infants less than two months of age.**

*Urinary Tract Infections:* Usual adult dosage—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days.

Recommended dosage for children—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. A guide follows:

*Children two months of age or older*

| Weight | | Dose—every 12 hours | |
|---|---|---|---|
| lbs | kgs | Teaspoonfuls | Tablets |
| 20 | 9 | 1 teasp. (5 ml) | ½ tablet |
| 40 | 18 | 2 teasp. (10 ml) | 1 tablet |
| 60 | 27 | 3 teasp. (15 ml) | 1½ tablets |
| 80 | 36 | 4 teasp. (20 ml) | 2 tablets or 1 DS tablet |

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**Supplied:** *Double Strength (DS) tablets,* each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100; Tel-E-Dose® packages of 100. *Tablets,* each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 40, available singly and in trays of 10. *Oral suspension,* containing in each teaspoonful (5 ml) the equivalent of 40 mg trimethoprim and 200 mg sulfamethoxazole, fruit-licorice flavored—bottles of 16 oz (1 pint).

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# A character all its own.

Valium (diazepam) is a benzodiazepine with a character all its own. Pharmacologically, it has been described as more potent mg-per-mg than other available anxiolytic benzodiazepines. Pharmacokinetically, only Valium provides active *diazepam* as well as the active metabolites 3-hydroxydiazepam, desmethyldiazepam and oxazepam.

But the individual character of Valium is even more apparent clinically than pharmacokinetically. And far more significant. That's because of the patient response obtained with Valium. A response which brings a calmer frame of mind. A response which has a pronounced effect on the somatic symptoms of anxiety, particularly muscular tension. A response which helps the patient feel more like himself again because of the way Valium reduces the overwhelming symptoms of anxiety and psychic tension.

Another important aspect of the clinical character of Valium is safety. Though drowsiness, ataxia and fatigue are possible, these and more serious side effects are rarely a problem. Of course, as with all CNS-acting drugs, patients taking Valium should be cautioned against driving, operating dangerous machinery or the simultaneous ingestion of alcohol.

Unquestionably, many psychotherapeutic agents, including other benzodiazepines, have antianxiety effects. But one fact remains: you get a certain kind of patient response with Valium. It's a response you want. A response you know. A response you trust as part of your overall management of anxiety and psychic tension.

**Valium®**
**(diazepam)** (IV)
2-mg, 5-mg, 10-mg scored tablets
**a prudent choice in psychic tension and anxiety**

**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy).

**Contraindicated:** Known hypersensitivity to the drug Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

***Usage in Pregnancy:* Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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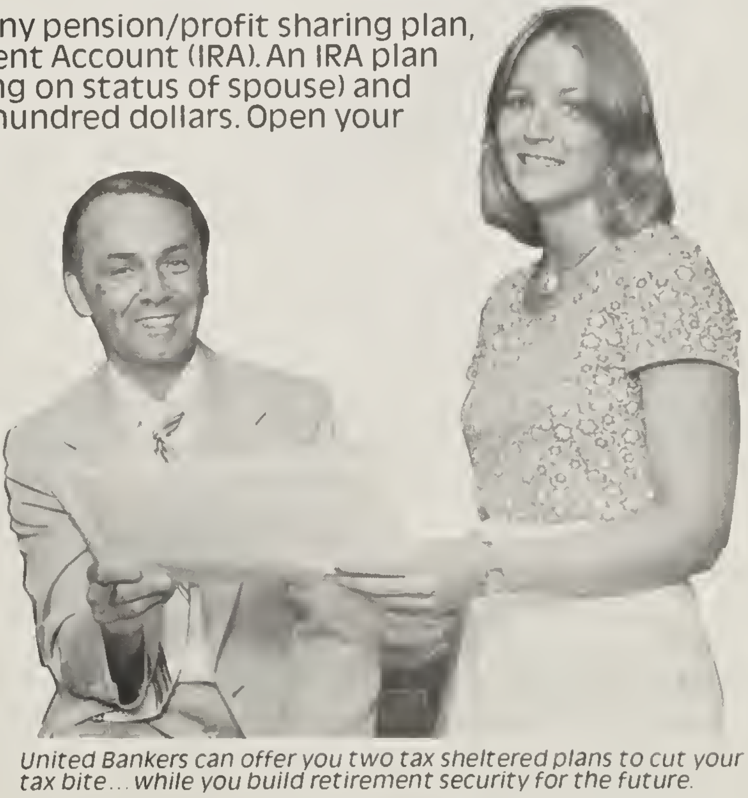

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When pain complicates acute cystitis*

**Azo Gantanol®**

Each tablet contains 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl

for the pain for the pathogens

☐ **Early relief of painful symptoms** such as burning and pain associated with urgency and frequency.

*Nonobstructed; due to susceptible organisms

☐ **Effective control of susceptible pathogens** such as *E. coli, Klebsiella-Aerobacter, Staph. aureus, Proteus mirabilis* and, less frequently, *Proteus vulgaris.*

☐ **Appropriate antibacterial therapy:**
up to three days therapy with Azo Gantanol, then 11 days with Gantanol® (sulfamethoxazole), 0.5 Gm tablets.

**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** In adults, urinary tract infections complicated by pain (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli, Klebsiella-Aerobacter, Staphylococcus aureus, Proteus mirabilis* and, less frequently, *Proteus vulgaris*) in the absence of obstructive uropathy or foreign bodies.

**Note: Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; add aminobenzoic acid to follow-up culture media. The increasing frequency of resistant organisms limits the usefulness of antibacterials including sulfonamides.** Measure sulfonamide blood levels as variations may occur; 20 mg/100 ml should be maximum total level.

**Contraindications:** Children below age 12; sulfonamide hypersensitivity; pregnancy at term and during nursing period; because Azo Gantanol contains phenazopyridine hydrochloride it is contraindicated in glomerulonephritis, severe hepatitis, uremia, and pyelonephritis of pregnancy with G.I. disturbances.

**Warnings:** Safety during pregnancy not established. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy.

**Precautions:** Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

**Adverse Reactions:** *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, Stevens-Johnson syndrome, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *G.I. reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L. E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

**Dosage:** Azo Gantanol is intended for the acute, painful phase of urinary tract infections. *Usual adult dosage:* 2 Gm (4 tabs) initially, then 1 Gm (2 tabs) B.I.D. for up to 3 days. If pain persists, causes other than infection should be sought. After relief of pain has been obtained, continued treatment with Gantanol (sulfamethoxazole) may be considered.

**Note:** Patients should be told that the orange-red dye (phenazopyridine HCl) will color the urine.

**Supplied:** Tablets, red, film-coated, each containing 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl—bottles of 100 and 500.

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# TRIAMTERENE CONSERVES POTASSIUM WHILE HYDROCHLOROTHIAZIDE LOWERS BLOOD PRESSURE

# DYAZIDE®

Each capsule contains 50 mg. of Dyrenium® (triamterene, SK&F Co.) and 25 mg. of hydrochlorothiazide.

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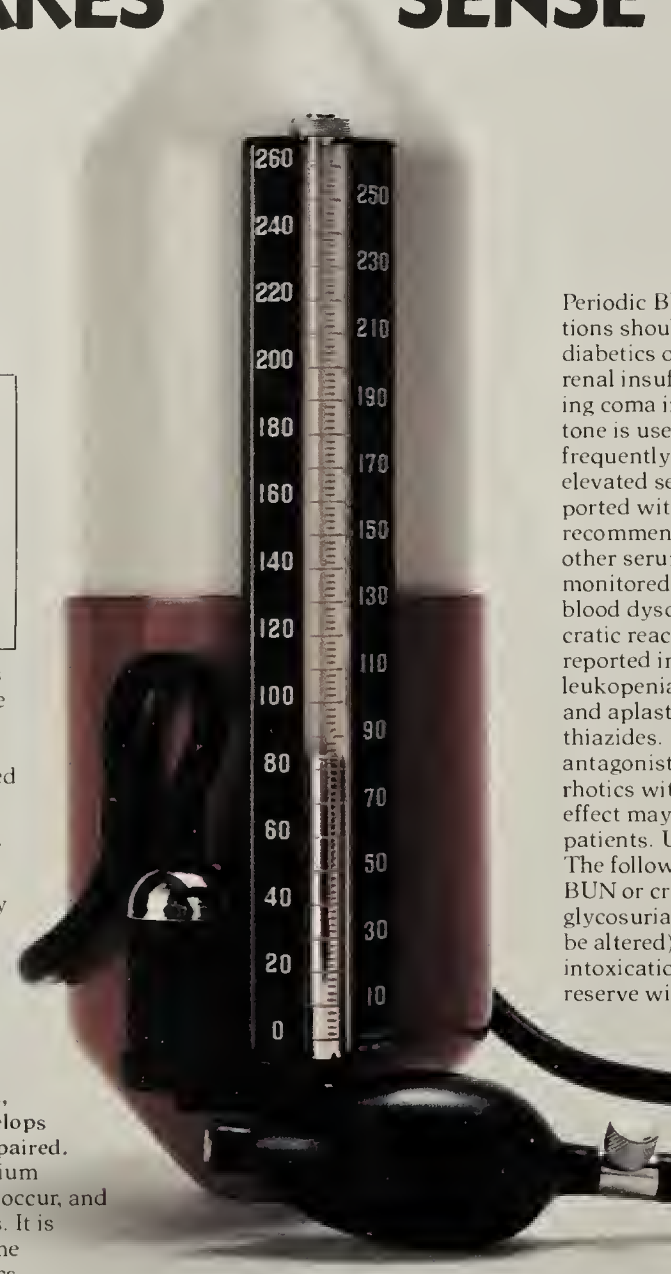

Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. A brief summary follows:

* Warning
This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

* **Indications:** When the combination represents the dosage determined by titration: Adjunctive therapy in edema associated with congestive heart failure, hepatic cirrhosis, the nephrotic syndrome. Corticosteroid and estrogen-induced edema, idiopathic edema; hypertension, when the potassium sparing action of triamterene is warranted. (See Box Warning.) Routine use of diuretics in healthy pregnant women is inappropriate; they are indicated in pregnancy only when edema is due to pathological causes.

**Contraindications:** Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings:** **Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired.** If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K$^+$ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K$^+$ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum K$^+$ frequently; both can cause K$^+$ retention and elevated serum K$^+$. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine.

**Adverse Reactions:** Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

**Supplied:** Bottles of 100 and 1000 capsules; Single Unit Packages of 100 (intended for institutional use only).

**FOR LONG-TERM CONTROL OF HYPERTENSION.* SERUM K$^+$ AND BUN SHOULD BE CHECKED PERIODICALLY. (SEE WARNINGS SECTION.)**

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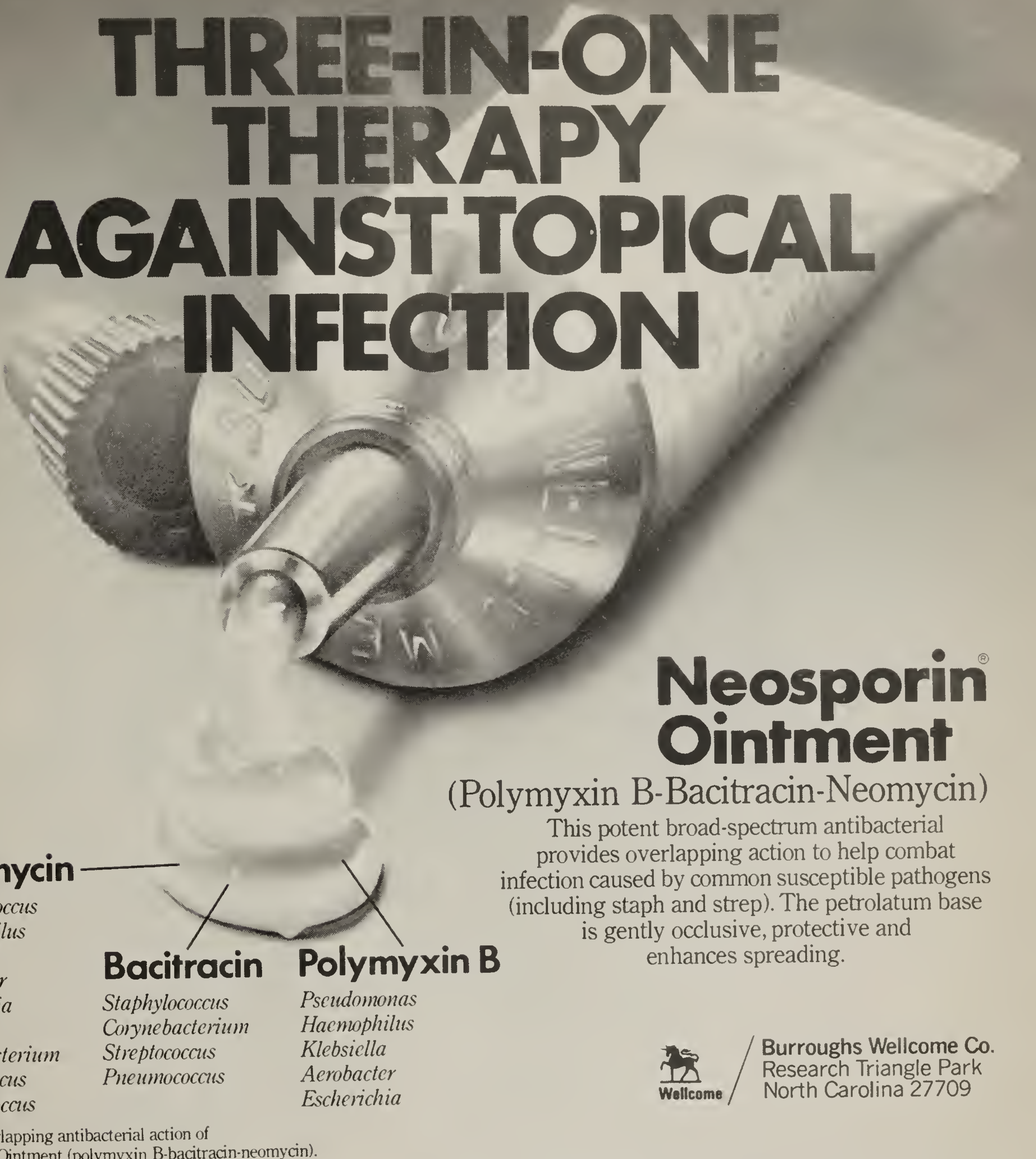

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| *Aerobacter* | *Pneumococcus* | *Aerobacter* |
| *Escherichia* | | *Escherichia* |
| *Proteus* | | |
| *Corynebacterium* | | |
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*In vitro* overlapping antibacterial action of Neosporin® Ointment (polymyxin B-bacitracin-neomycin).

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Research Triangle Park
North Carolina 27709

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## Neosporin® Ointment

(Polymyxin B-Bacitracin-Neomycin)

Each gram contains: Aerosporin® brand Polymyxin B Sulfate 5,000 units, zinc bacitracin 400 units; neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

**WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

**PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

**ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

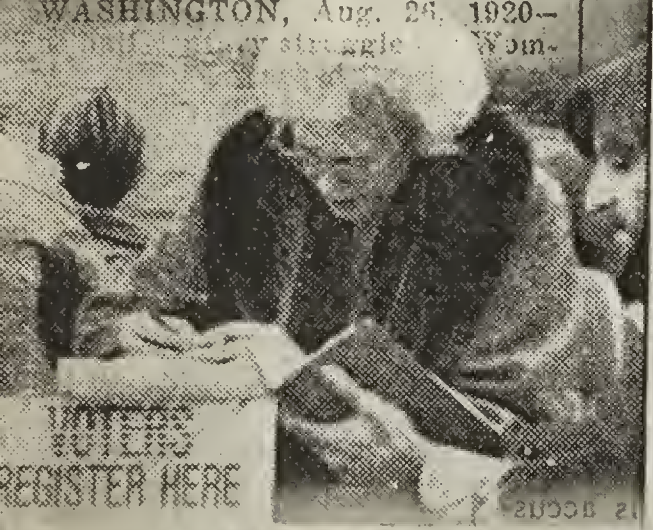
# COLBY PROCLAIMS WOMAN SUFFRAGE

Signs Certificate of Ratification at His Home Without Women Witnesses.

MILITANTS VEXED AT PRIVACY.

Wanted Movies of Ceremony, But Both Factions Are

WASHINGTON, Aug. 26, 1920—[illegible] struggle [illegible] Wom-



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# *Social Security Bill Is Signed; Gives Pensions to Aged, Jobl*

*Roosevelt Approves Message Intended to Benefit 30,00 Persons When States Adopt Cooperating Laws—He C the Measure 'Cornerstone' of His Economic Progran*

WASHINGTON, Aug. 14, The Social Security Bill, pro a broad program of unemplo insurance and old age pe and counted upon to benefi 20,000,000 persons, became l day when it was signed by dent Roosevelt in the prese those chiefly responsible fo ting it through Congress.

Mr. Roosevelt cal [illegible] m "the cornerstone [illegible] which is being [illegible] me s comple [illegible] rin to [illegible]

---

# SENATE APPROVES 18-YEAR OLD VOTE IN ALL ELECTIONS

Amendment to Constitution is Sent to House, Where Passage is Expected

WASHINGTON, March 10, 1971—The Senate approved today, 94 to 0, and sent to [illegible]

---

# *TRUMAN CLOSES TED NATIONS CONFEREN ITH PLEA TO TRANSLATE CHARTER INTO DEEDS*

## NEW WORLD HOPE

President Hails 'Great Instrument of Peace,' Insists It Be Used

## HISTORIC LANDMARK

Meeting Gives Standing Ovation as Executive Pictures Peace Gain

"If we fail to use it," he declared to the solemn final meeting of the delegates, 'we shall betray all of those who have died in order that we might meet here in freedom and safety to create it.'

"If we seek to use it selfishly—for the advantage of any one nation or any small group of nations—we shall be equally guilty of that betrayal."

### Fervent Interpolation

The President, speaking in the auditorium of the War Memorial Opera House, built in memory of sons of the Golden Gate city who gave their lives in the first World War, in which he himself served, seemed to give unconscious expression to the solemn feeling of the occasion when, at the outset of his speech, he interpolated the words, half a hope, half a prayer:

"Oh, what a great day this can be in history!"

Just before the plenary session the President accompanied the

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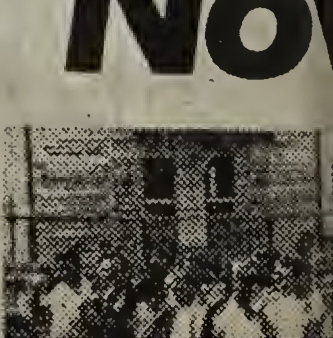
UL

# SIGNE

# the Draf Ends No

WASHINGTON, Jan. 27, 1973—"With the signing of the peace agreement in Paris today, and after receiving a report from the Secretary of the Army that



# PATIENT PACKAGE INSERTS: A CONCEPT WHOSE TIME HAS COME?

*The consumer's right to know is an irreversible and desirable trend of the Seventies. It extends, and properly, to a patient's right to know more about his or her prescription medications. One way, gaining favor, is through patient package inserts. Wisely-prepared and properly distributed when medically indicated, they could markedly improve patient knowledge and drug therapy—laudable goals by anyone's standards.*

*The PMA endorses these goals and will work with government, the health professions and consumers to achieve them.*

## The Advantages

The concept holds promise of benefits: better patient understanding of the product prescribed, better adherence to the treatment plan, and more awareness of possible side reactions.

Every doctor has had patients who fail to finish antibiotic regimens because they feel better. Some patients assume that if one tranquilizer or analgesic is good, two may be twice as good. Still others fail to report dizziness while on antihypertensive therapy —and so on.

Problems like these might arise less often if the patient received written information in addition to verbal instructions. Some studies suggest that patients are more receptive to such materials, and they more often understand the verbal instructions and follow them, when inserts are used.

## The Disadvantages

There are also some potential problems. Obviously, the inserts must be clearly phrased, without extraneous or complex detail. How much information is enough? How can it be kept current? Should all patients receive the same information? Should inserts be included with all drugs? Should only potential problems be listed or are patients better off with a "fair balance" presentation that describes usefulness as well as drawbacks?

These and similar questions require answers, since model inserts have yet to be properly developed and tested. Despite the need for these studies, the FDA is proceeding prematurely with inserts on selected products. We think the Congress is the only place where the matter can be given the proper legal status and direction, particularly since it represents a conceptual change in the legal, medical and social framework of the nation's prescription drug information system.

## The Solution

The PMA believes that carefully-devised pilot studies of various kinds of inserts are needed. They should be developed and implemented with full participation by doctors, pharmacists, consumers, communications experts and the drug industry. Such studies will provide reliable pathways to follow, so that inserts will be useful aids to medical practice.

And particularly we think that you should be closely involved in this debate and in these studies and decisions. Otherwise, people with less experience and qualifications may control the purposes, content and use of a tool with considerable promise for improved patient care. It could make a difference in your practice tomorrow, and more importantly, in the health of your patients.

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*Emotional Disorders*

# Christmas and Depression

Hal J. Breen, M.D.

The association between Christmas, or more properly the "Christmas Season" and an increase in numbers of people who are overtly depressed is common knowledge. For physicians generally and of course psychiatrists, this is no trivial matter. Many patients ask their physicians for medication to "tide them over", or reveal that drinking and promiscuity or other forms of self-destructive behavior are consciously associated in their mind with depression which they relate to Christmas.

This paper is an attempt to explain the psychological aspects of this phenomenon, and the author explicitly disavows any explanation of the religious significance of this season, nor does he feel that the religious significance or value attached to Christmas is in any way diminished by any possible psychological insight. The proposed psychological meaning of Christmas does not purport to be the "real" meaning to the exclusion of other meanings and does not explain or supersede religious or other meanings.

The most common explanation of Christmas depression is that it is a consequence of remembering, at this time of year, some past pleasure which is no longer available. Patients frequently allude to the death of parents, or with older patients, the dissolution of the nuclear family with the scattering of members of the formerly close-knit unit. It is very common, however, for patients to profess total lack of awareness of any special reason for their annual depression. The latter observation alone raises a question as to the adequacy of the conventional explanation. Why should the loss of loved ones, children or parents, be mourned on just this particular occasion? The not very convincing explanation is that the depressed one is reminded particularly of the close family relationships because Christmas is very much a family centered experience. Almost no one, however, mourns the Fourth of July, also a family centered holiday, nor is there mourning or depression associated with Easter, an important family centered experience in many families, and with the somber added theme of death and resurrection. We largely reserve our holiday-related depression for the celebration of the unambivalent pleasure of Christ's birthday.

A consideration of some of the social and religious features of Christmas suggests a psychological meaning which has heretofor eluded us. The most striking characteristic of Christmas is the truly frenetic insistance on Joyousness. This is presented not as a natural or inevitable consequence of the Christmas celebration, but very much as an obligation, indeed a duty which if ignored or denied provokes considerable wrath. The "Christmas Spirit" is mandatory, and those who, like Scrooge, are not accepting are the object of hostility, like any spoilsport or party-pooper. It has occurred to many, no doubt, that the insistence on joy and merriment is peculiar and that there is something "phony" about it. In fact, the insincerity and spuriousness is frequently commented upon, usually with the exhortation that one should attach more religious significance to the holiday. In any case, the ironic aspect of widespread depression associated with Christmas is not lost on very many.

The second feature of Christmas which we note is that there is tremendous emphasis on the gratification of children. This takes a number of different forms. Children are given toys, and there is a clear distinction between the toy and the utilitarian present. It is felt to be essential that the child be pleased, even if his wishes are excessive or at the expense of more practical gifts. In addition to toys, children are indulged in a variety of other ways. They are given candy and food that they particularly like. The corolary of all this in religious symbolism is the creche or representation of the Nativity scene. In this symbol, which is admired and displayed during the Christmas season, the Christ-baby, lying in the manger, is the focus of attention, and there is usually the depiction of the Wise Men, together with gifts which they have brought, and kneeling figures, which are worshipping the infant.

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The third feature of Christmas which is essential to our understanding is the emphasis on the denial of aggression. This is of massive proportions, with particular but not exclusive emphasis on the child as the object of hostility. The hostility is specifically counter-balanced by the assertion of love. The "Spirit of Christmas" not only demands jollity, but proscribes such minor manifestations of hostility as ordinary irritation and impatience.

The salient features of Christmas, then, may be summarized as follows'; There is evidence of widespread depression; there is a demand for a happy outlook with overt manifestations of joy; there is a tremendous emphasis on the gratification of children; the use of the nativity scene as a religious symbol implies the worship of the Infant Jesus; and there is a demand for massive denial of all forms of hostility, particularly toward children, with the assumption that love has "conquered" the hostility.

Do all of these features have a common source? I believe that this is the case, and that the underlying explanation is that Christmas is a social ritual which serves the primary purpose of warding off the feelings associated with a series of developmental events which we all have experienced. In *Mourning and Melancholia* Freud delineated the essential psychological relationship between loss and depression or mourning. Depression can, of course, be mediated through a variety of biochemical or physiological pathways, but the relationship psychologically between loss and grief or depression is irrefutable. What then constitutes the loss which we ascribe to a universal developmental experience? The answer is to be found, if our inferences are correct, in the rituals which we practice at Christmastime. We pay homage to the child, and in the imagery of the creche, to the infant. The adoration, the showering with presents and the implicit power over adults suggest that this is a form of undoing or restitution. And indeed this is not hard to understand in the light of the developmental experience to which we have referred, for all of us, at one time, were king of the nursery. Reality made no demands on us; whatever we wished for was awarded as if by magic. There was no limit to our power, for our wishes were omnipotent. No doubt our very concept of worship is related in part to our earliest experiences, when every wish was gratified.

Adaptation and survival compel the imposition and acceptance of limitations, after a brief reign of this Eden-like existance. This does not take place abruptly, and it is only after numerous and painful renunciations and accomodations that we are able to accept reality. Ultimately, the Kingdom of Infancy and Childhood is lost, and we become aware of our helplessness in an implacably indifferent world. The nexus of our infantile experience to Christmas depression is in the feelings which are engendered, and which persist, that are consequent to the giving up or loss of our state of infantile power, grandiosity, and expectation of limitless supplies of love and adoration. The forces which impel the infant and child to relinquish his demands and temper his expectations are subsumed, as previously mentioned, under the category of "reality demands". This is convenient, but clearly an oversimplification. The acceptance of reality is promoted by many factors, both experiental and inborn and maturational. For the purpose of this paper, we are more concerned with the emotional consequences and the ways in which these are manifested.

It is certain that the relinquishment of the infantile identity is perceived as a *loss* and that this is a source of depression. It follows also that feelings of anger are associated with the loss, not only as a direct consequence of the loss, but also as a response to those intrusions of reality which precipated the loss in the first place. The general character of these negative experiences is one of impatience, irritation and frustration, expressed by all parents toward their children, sooner or later.

Christmas, then, is perceived as a social ritual which serves the psychological purpose of countering feelings of depression and hostility, primarily through the use of denial. It is not an accident that this is identified with the Child who was worshipped, for He is all of us. The obligatory character of happiness at Christmastime is a clear indication of the collective use of the defense, and the hostility toward Scrooges is understandable as a threat to a tenuous affirmation of "joy", which requires reinforcement through group identification.

In addition to denial of depression, we see the denial of such forms of hostility as impatience and irritation, together with "selfishness". The latter is specifically applicable to adults, not applying to children, who are expected to be selfish. The denial thus pertains to those characteristics which the child perceives as instrumental in his fall from divine power. The Christmas customs not only deny certain feelings, but suggest in symbolic form the undoing and restitution of the traumatic event. Once again, in metaphor, the King is in his crib, the center of an adoring universe. He is surrounded by tenderness and love, and there is even an emphasis on the pleasure of smells, a vivid experience for the infant. There is no hint of anger, irritation, impatience or selfishness. Not blasphemously but metaphorically: He has been born again.

The widespread depression incident to Christmas, then, is not an accident but the consequence of a less than perfect defense, mediated through a social ritual, which has evolved as a way of dealing with feelings of grief and anger which we all experienced, once upon a time, a long time ago.

*Seminars in Gastroenterology and Liver Disease*

# Hepatic Encephalopathy

Stephen Glouberman, M.D.

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Hepatic encephalopathy (porto-systemic encephalopathy, PSE) is a neurologic disorder associated with severe liver disease. It may occur in liver disease of any cause, but is usually found in chronic hepatic disorders, most typically cirrhosis. It is characterized clinically by personality changes, intellectual deterioration, altered levels of consciousness, and abnormal neuromuscular states, most commonly recognized as asterixis. The EEG is abnormal, and in many instances the arterial blood ammonia and cerebrospinal fluid glutamine is elevated.

The disorder has been categorized into four stages. In Stage I, there is mild personality disorders, at times recognizable only by the patient's family or close associates. Asterixis may not be detectable and the EEG may show only minimal alterations. In Stage II, all of the disorders are more profound. The EEG cycle frequency decreases to about 5 per minute and high-amplitude wave patterns appear. In Stage III, the patient is somnolent but rousable, and asterixis is very noticeable when the patient is able to stretch out his arms and bend his palms back. The characteristic asynchronous flap of the hands is seen. In Stage IV, the patient is not rousable. **Etiology**. The exact biochemical derangement that initiates hepatic encephalopathy is not known. It appears that a nitrogenous substance, absorbed from the intestine, and not metabolized normally by the diseased liver, is the most likely defect. Many think that ammonia is that substance, although there is not an invariable correlation between the blood ammonia level and the degree of coma.[1] The correlation is better if the arterial ammonia level is determined, rather than the venous. If excess ammonia reaches the brain, it can then combine with glutamic acid to form glutamine, which is easily measurable in the CSF. However, only a fair correlation has been found between the level of the CSF glutamine, and the degree of coma.[2] Some have considered short chain fatty acids[3] and others "false neurotransmitters,[4] such as octopamine, to be important etiologically, but these are less well accepted than the ammonia hypothesis.

Hepatic encephalopathy is more apt to develop in certain settings. It is often seen in patients who have had a *portocaval shunt* for variceal bleeding, and is considered one of the complications of this operation. Following this surgery, blood bypasses the liver and toxic products, otherwise removed by the liver, enter the systemic circulation and reach the brain. *Gastrointestinal hemorrhage* is a major cause of hepatic encephalopathy. With blood in the intestinal lumen, a great amount of toxins are assumed to be available for absorption into the portal circulation, overwhelm the diseased liver, enter the systemic circulation, and then

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reach the brain. The use of *diuretics* may precipitate this syndrome. A metabolic alkalosis is often a concomitant of diuretic therapy. In the reaction, $NH_4 \rightleftharpoons NH_3 + H^+$, the equation is shifted to the right by an elevated pH. More ammonia is thereby produced in an alkaline environment and, as $NH_3$ enters cells more readily than does $NH_4+$, alkalosis may precipitate hepatic coma. *Infection* may elevate the endogenous nitrogen load by enhanced tissue catabolism. *Uremia*, with or without the *hepatorenal syndrome*, can initiate or exacerbate PSE. Blood urea, elevated in uremia, is metabolized to ammonia, and leads to an increased level of this nitrogenous substance. *Sedatives and depressnats* can exacerbate the syndrome by a direct effect on the brain. Demerol, morphine, Valium, Librium and most of the common sedatives and hypnotics have a prolonged half life in patients with liver disease and can enhance the degree of coma. Serax was found to not have an increased half life in patients with liver disease, and should be considered for use in these patients who require sedation. An often overlooked cause of hepatic encephalopathy is *constipation.* As fecal matter remains in the colon for prolonged periods greater time is available for absorption of potentially toxic substances.

**Treatment** The therapy of hepatic encephalopathy is aimed at decreasing the nitrogenous load that can be absorbed from the intestinal tract. The use of a low protein diet in a patient who has had a portacaval shunt is often very effective in this regard. A total of 20 or 40 grams of protein per day may be all that the patient will be able to tolerate. If bleeding is occurring into the intestinal tract, this should be stopped by iced saline lavage, use of the Sengstaken-Blakemore tube if esophageal varices are bleeding, or intraarterial pitressin. Removal of residual blood through nasogastric suction and cathartics will be beneficial. Cathartics would also be helpful if the patient suffers from constipation. If prerenal azotemia has been induced by diuretics, these drugs should be halted and the urine output should be increased, even at the expense of a temporary increase in edema or ascites. Acidifying agents, such as lysine monohydrochloride, have been utilized in the past without singular improvement. Infections should be treated with appropriate antibiotics. Sedatives should be discontinued.

Neomycin has long been used in the treatment of this syndrome. The rationale for the use of this antibiotic is that by eliminating bacteria in the gut, toxic products will not be formed and the syndrome will improve. It is a successful therapy in many patients, and is employed by mouth or enema in amounts ranging from 500 mg. to 4 gm. or more in daily divided doses. As the patient improves, the dose can be tapered, concomitant with a gradual increase in the dietary protein intake. Many patients with chronic hepatic encephalopathy are maintained on long-term neomycin intake. About 3% of an oral dose of neomycin is systemically absorbed, and permanent deafness,[5] intestinal malabsorption and nephrotoxicity may complicate its use.

Lactulose is a relatively new form of treatment for hepatic encephalopathy.[6,7] It is a synthetic disaccharide, containing galactose and fructose. This sugar is not degraded by human enzymatic processes, but is metabolized by colonic bacteria to osmotically active, small molecular weight acids. These lower the fecal pH to about 5, shift the equilibrium of $NH_4+ \rightleftharpoons NH_3 + H+$ to the left making less ammonia available for absorption, and induce diarrhea. It is effective in about 90% of patients, a figure not statistically different when neomycin is used.[8] It is essentially nontoxic and is therefore preferred by many to neomycin in the long-term therapy of PSE. The dose can be individualized after beginning at 15-30 cc. three or four times a day. The goal is to improve the patient's intellectual function and improve neuromuscular co-ordination. This is often accomplished when the drug produces two to three liquid stools per day.

L-dopa has also been used in the treatment of this condition on the theory that this drug may result in the formation of more physiologic neurotransmitters. Of 35 patients treated with it, only 14% responded and survived.[9] Most investigators have now abandoned its use.

## SUMMARY

Hepatic encephalopathy is a chronic neuromuscular impairment and intellectual deterioration associated with advanced chronic liver disease. It can be effectively treated by good supportive care, and by the addition of neomycin and/or lactulose. These modalities, however, do not correct the underlying liver disease, and exacerbations may ensue with time. Unless the liver disease can be overcome, as by hepatic transplantation, hepatic encephalopathy can only be treated, but not cured.

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## Neurology

# Myasthenia Gravis

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Myasthenia gravis is a disorder characterized by varying weakness and excessive fatiguability of voluntary musculature. Following a brief period of rest, there is at least a partial recovery of strength. While the disease has long been known to primarily involve the neuromuscular junction, its precise etiology remains obscure. In recent years, however, there have been major advances in our understanding of myasthenia and in a more effective approach to treatment. The earliest descriptions of myasthenia gravis are credited to Thomas Willis in 1672, although Erb, Goldflam and Jolly gave more extensive descriptions of the disease near the end of the 19th century[1]. Its exact prevalence is unknown but estimates range as high as one per 10,000 in the general population[2]. The disorder occurs in both sexes at any age and in all races. It is more common in women, however, whom it tends to affect between their late teens and age 40. In later life it is slightly more common in men. While not considered an inherited disorder in most cases, there is a greater familial incidence then might be expected by chance alone[3]. In addition, a transient form of neonatal myasthenia occurs in some babies born to myasthenic mothers. This rarely lasts more than a few weeks, following which the infant is normal.

The symptoms of myasthenia gravis are characteristically fluctuating and evanescent early in the course of the disease. They may consist of varying degrees of any of the following, alone or in combination: drooping of one or both eyelids, diplopia, facial weakness, difficulty chewing or swallowing, dysarthria, neck weakness and weakness of proximal and/or distal limb muscles. The weakness and fatiguability are often worse during emotional stress, menstrual periods, increased physical activity and with intercurrent infections.

The signs of weakness and fatigability are also evanescent early in myasthenia. They are variable and often asymmetrical both in severity and distribution. Some patients have a relatively restricted form of the disease involving, for example, the extraocular muscles. Others may have a patchy distribution or the involvement may be more generalized. Ptosis of the eyelids is usually asymmetrical and fluctuating. Upward, medial and lateral movements of the eyes are more frequently limited than downward movement. Pupillary responses are generally normal. The muscles closing the jaw are frequently involved so that the patient may support his chin with his hand or use it to help close his jaw in order to chew. The face is relatively smooth and often expressionless because of weakness with the risorius frequently spared, resulting in a sneering expression instead of an intended smile. The neck flexors are commonly involved causing the patient difficulty raising his head from the supine position. Often the deltoids are involved and the patient has difficulty abducting and extending the arms at the shoulders or raising them above the head.

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Weakness and fatigability of the intrinsic muscles of the hand are also common.

Involvement of the respiratory muscles, including the diaphragm and intercostals, may be manifested by varying depth of breathing, movement of the rib cage, muffled cough and diminished vital capacity. Marked decreases in respiratory function may occur following repeated deep breathing or a rapid series of coughs. Of the hip girdle musculature, the ileopsoas group is most frequently involved. This may be reflected by weakness in flexion of the thigh at the hip and crossing and recrossing the knees in the sitting position.

The diagnosis of myasthenia gravis should be suspected in patients complaining of muscle weakness and easy fatigability of muscle strength. Tests on physical examination may include having the patient sustain upward gaze to note any fatigue of the levators of the lids or the extraocular muscles, continuous counting to detect fatigue of speech and holding the arms extended over the head. Other means of demonstrating increased muscle weakness include squatting exercises and repeated compression of a dynamometer.

An interesting feature of myasthenia gravis and one that is often helpful in diagnosis is the usual improvement of muscle strength after administration of anticholinesterase drugs. The response to anticholinesterases should be preceded, however, by baseline observations of strength in several muscle groups as well as observations after administration of a placebo. This function may be served by a subcutaneous injection of 0.4-0.6 mg of antropine, which also helps protect the patient from the sometimes unpleasant cholinergic side effects of the anticholinesterase medication to follow. Edrophonium (Tensilon) given intravenously in a dose of 1-2mg initially followed by another 4-8mg has a rapid onset of action (within 30 seconds) and a short duration of effect (several minutes only), which may be too brief in some cases to adequately test for improvement in muscle strength. Intramuscular neostigmine (Prostigmin), given in a dose of 1-1.5mg. has a slower onset of action (10-15 minutes) but a more prolonged effect (2-3 hours) which allows for more systematic testing of the various affected muscle groups.

Electrodiagnostic procedures are also quite useful in the diagnosis of myasthenia gravis and in distinguishing it from other myasthenic syndromes such as that of Eaton and Lambert, which is usually associated with oat cell carcinoma of the lung. Repetitive stimulation of the nerve to the thenar or hypothenar muscle groups with recording of the resultant integrated muscle action potentials may show a variety of responses characteristic of the disorder. To be reliable, however, these procedures require special training and experience, as well as special equipment. Newer electrodiagnostic techniques employing single fiber electromyography appear to have the potential for even greater diagnostic sensitivity but are not yet generally available.

There are, at present, no specific laboratory tests for myasthenia gravis but the association of a variety of immunologic abnormalities with the disorder may well lead to the development of at least relatively specific confirmatory serologic tests in the near future. Routine x-ray films of the chest including both posteroanterior and lateral views should be performed in all cases and in some, lateral tomograms of the anterosuperior mediastinum may also be helpful in detecting an associated thymoma. Muscle biopsy, which may show a variety of nonspecific changes, is usually not necessary for diagnosis unless some other neuromuscular disorder is being considered in the differential diagnosis. Other laboratory tests, including serum enzymes such as creatine phosphokinase (CPK) are generally normal.

In order to understand the basis for what are currently considered the most effective forms of treatment for myasthenia gravis, one must at least mention the recent advances in our understanding of the disease process. Briefly stated, these seem to support the concept of myasthenia as an autoimmune disorder primarily affecting the acetylcholine receptors of the post-synaptic muscle membrane. The evidence for this is morphological, physiological, and biochemical and has been reviewed extensively elsewhere[4]. The rationale for the use of each of the currently used modes of therapy relates, at least in part, to this concept with the exception of the anticholinesterases. The latter drugs, while still useful in treatment, are increasingly being employed only as an adjunctive form of therapy or in special situations.

Although many neurologists still favor thymectomy[5], the use of corticosteroids has rapidly increased in popularity during the past few years and is now widely considered the treatment of choice in patients with myasthenia gravis in whom such drugs are not contraindicated for other reasons and who do not show evidence of a thymoma[6].

The most commonly used steroid preparation is oral prednisone which is given in high doses (80-100mg) on an alternate day regimen which includes a sodium-restricted diet high in protein and with supplemental potassium[7]. The optimal dosage and regimen must be determined for each patient, however, and altered when necessary. Treatment is most safely begun with the patient in the hospital, since there is occasionally an initial worsening before the onset of improvement. This initial weakening effect was seen much more commonly with adrenocorticotropic hormone (ACTH), perhaps because of its own neuromuscular blocking effect[8,9]. Treatment must sometimes be continued for months before induction of a remission but once achieved, the remissions are usually prolonged and may be permanent[10].

Thymectomy is also capable of producing a remission in myasthenia gravis but does not appear to be nearly as effective as corticosteroids in the older group of patients. Nevertheless, it remains the treatment of choice certainly for patients suspected of having a thymoma and perhaps for some others as well. In younger patients, thymectomy followed by corticosteriod therapy represents an approach which is also increasing in popularity among those working in the field[8]. It should be emphasized that the relative merits of corticosteroid therapy and thymectomy are still somewhat controversial and the results of several crucial studies weighing the various different approaches to treatment of myasthenia gravis (including a possible place for the use of plasmapheresis) are not yet available.

The use of immunosuppressive drugs like azothioprine is usually reserved for patients not responding to corticosteroids and/or thymectomy. Of the anticholinesterases, pyridostigmine (Mestinon) is the most commonly used oral preparation. Other drugs which have been used in the past such as ambenonium (Mytelase) are rarely employed at the present time.

The treatment of myasthenic crisis requires special mention because it represents a grave medical emergency. The bases of treatment involve withdrawal of all medication, extensive search for intercurrent infection and maintenance of adequate respiratory function. This often involves prompt tracheostomy and controlled or assisted mechanical respiration. The treatment of myasthenic crisis is best handled by a multidisciplinary team, which includes an experienced neurologist, in an intensive care facility for patients with chronic respiratory insufficiency or in a center dealing frequently with myasthenia gravis patients.

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*Obstetrics and Gynecology*

# Obstetrical Overview

Angus DePinto, M.D.

> Medical advances with the resultant change in established precepts for patient care invariably challenge our past teaching. Progress is obviously to be sought in all areas of endeavor. But a periodic reappraisal of previous training can be helpful. Occasionally a new aggressive approach to a problem may be tempered by reflection on its relationship to prior experience. While many readers will violently disagree with the thoughts of the author and may dismiss them as the rantings of an "older, out-of-date" obstetrician, the experience of some four decades of practice cannot be lightly discounted. As observed by Sir F. M. R. Walshe", . . . the fair perspectives that are now opening before you are largely the creation of those who have gone before you. It is therefore reasonable to think that anyone who has spent a long professional life in medicine must have something to hand on—however small or modest."
>
> Donald J. Ziehm, M.D. Editor

To understand present obstetrical care we must look in the past and realize that certain dictums once considered absolute truths become revealed as only part truths with the passage of time. What really occurred centuries ago when women midwives were in

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From: 550 W. Thomas Rd., Phoenix, AZ 85013.

complete charge of the birth process? Pregnant women were expected to deliver themselves and probably did, one way or another. The birth chair was in vogue. Neither analgesia nor anesthesia was permitted. Heated discussions developed over whether the supine position, the squatting position, or the side position was the best for delivery. There may also have been disputes over what type of feather was preferable for "quilling" a patient in labor! Only in the most prolonged labor was the "surgeon" called in. His function was primarily to destroy the fetus and remove it, or to deliver by version and extraction.

Harvey in 1651 published a text in which he advocated: "the longer the birth is retarded, the more safely and easily is the process completed." Now ponder that remark! In other words, slow labor was promoted as the safest and best. We could still benefit by occasionally quoting that to ourselves.

Mariceau was one of the first obstetric specialists. Midwives actively opposed him since he was stealing their business. The development of the obstetrical forceps in 1670 by the Chamberlains contributed immensely to improvement of care. Their instrument (not much different from those used today) was kept a secret for their own use for many years. However, forceps did not come into general use until the middle of the 18th century, almost 100 years after their origination. In 1752 Smellie published an obstetric manual. His practice flourished but he also encountered strong resistance from the midwives who promoted the idea that women being attended by a male midwife were indelicate or were too brazen to be considered good women.

Anesthesia for delivery didn't appear until about the middle of the 19th century. In 1899 "twilight sleep" was popularized, consisting of several doses of Morphine and Scopolamine. As usual, those who chose not to use this new technique were considered backward or too conservative.

The delivery chair controversy has continued until very recently. In 1919 a special delivery chair was promoted by Markow in New York. DeLee, at about the same time, wrote extensively against the delivery chair, and upon the theme that a slow, spontaneous delivery should be sought. Those were the days of "watchful waiting." There can be little doubt that this concept on the whole, and in the long run, gave excellent results. As recently as 1950 a Dr. Howard vociferously promoted the sitting or squatting position as best for delivery — back to the birthing chair. In 1964, a mere 13 years ago, Dr. Geiger of Chicago published a paper describing a combined birth chair and bed combination.

Dr. Grantly Dick Read emerged in the 1930s with his writings on natural childbirth. His method was merely a form of psychotherapy mixed with positive thinking and autosuggestion (the process doesn't hurt if I say it does not). In 1951 a Frenchman copied the Read method and attached his name to it. Presto and viola — the wonderful LaMaze Method was born. Again, another approach to promoting and encouraging physical and psychological for labor. Perhaps many of our current obstetrical difficulties could be solved with the combination of all these techniques together with a revival of the birth chair!

Concepts taught to me during residency over 40 years ago still apply to present practice, but are frequently overlooked or forgotten.

1) "Watchful waiting." The course and progress of a patient in labor is to be observed and studied. One should not interfere until it is absolutely certain that a procedure must be performed.

2) "Primum non nocere."

3) "Do unto others as you would have them do unto you."

These cliches sound very trite perhaps, but hardly a day passes when a good physician isn't instinctively following one or all of them.

In this vein one must question the present Cesarean Section rate. Is a rate of 15-20% necessary when not too long ago it was 2-4%. There are many reasons for this. First and foremost I would blame the use and abuse of Pitocin. In my training Pitocin was given only after delivery. Its use to induce or augment labor was discouraged. Pitocin induction of labor must be regarded as potentially hazardous and approached with extreme care. Even when fetal heart irregularities are not demonstrated there is a certain amount of interference with the placental-maternal transfer of oxygen with contractions. This interference is minimized in spontaneous onset of labor at term. because the early labor is always gentle and really ineffectual as far as progress is concerned. This prodromal stage becomes more effective and forceful so gradually that disturbances of fetal oxygenation do not occur sufficiently to cause any anxiety.

Careful students of the labor process will agree that in nearly every pregnancy a "practice labor" occurs about 7-10 days before the main event. This may be a natural or spontaneous challenge test. It really is a practice session during which the uterus is preparing itself for real labor. The fetus drops deeper into the pelvis, and the cervix effaces. The uterus then seemingly rests for a week or so before actual labor begins. When Pitocin is given at this prodromal phase the obstetrician is merely looking for trouble. Uterine inertia may develop. The problem is then solved by doing a Cesarean Section!

Klapholz and Friedman in February 1977 reported a carefully monitored series of 669 patients in labor, concentrating particularly on the "past term" patient. Variable decelerations were present in 449, or about 66%. The post-term group was similar to those who were 38-40 weeks gestation in that respect. Late decelerations developed in 166 (24%), 8% of these being severe, 9% moderate. They concluded that the overdue patients (42 weeks or more) were at no greater risk. Intervention, they felt, was justified only when actual fetal distress was present. According to their study there was little to warrant aggressive intervention at or beyond term on a "prophylactic" basis in anticipation of unforeseen intrauterine hypoxia.

And what of fetal monitoring? Goodlin states "our experience indicates that in a well screened and healthy population electronic intra-partum monitoring adds little in improvement of the perinatal mortality rates, or of the well being of newborn infants. It just serves to increase the Cesarean Section rate." In the final discussion of his paper he "keeps hoping that some day monitoring will prove to be of some value. Haverkamp, et al reporting on 483 high risk patients in labor found no benefits in electronic monitoring. 242 were monitored and 241 were followed by simple auscultation. No significant differences were encountered, except in the Cesarean Section rate (16.5% in the monitored group and 6.6% in the non-monitored patients). The postpartum infection rate was significantly higher in the monitored group. No difference was evident in perinatal morbidity. Two perinatal deaths occurred in the monitored fetuses, one in those followed by auscultation.

My final comments concern breech delivery. Some 40 years ago a Dr. Potter delivered all patients by the breech. In every delivery he waited until the cervix was completely dilated. Then he would anesthetize the mother, "iron out" the perineum and deliver by podalic version and extraction. Furthermore, he got uniformly good results, and never was sued! (I'm sure he couldn't get by with that nowadays.) Wheeler and Greene reported on 42 breech deliveries, 32 of which were in primigravidas. They demonstrated a 9% fetal death rate and a 13% neonatal death rate. They quote only a 1.3% death rate when delivery was by Cesarean Section. In contrast, Donnae and Nicholas reported 138 breech deliveries using epidural or spinal anesthesia, 10 of the 138 by breech extraction. There was only one stillborn, which they said could have been avoided by monitoring. Many obstetricians now advocate universal Cesarean Section for all breech presentations. I find it difficult to accept that concept, especially in a parous woman who has delivered a full term baby of average size or over in a previous pregnancy. In primigravidas individualization is necessary with careful study of the patient before deciding on Cesarean Section. More recently the malpractice furor has caused a much more radical approach to the problem, and hence more Sections.

There is a natural "built in" risk in every pregnancy and delivery. The risks must be assumed by every doctor who calls himself an obstetric specialist. Careful evaluation, and the proper amount of "watchful waiting", will bring about the desired results.

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*Oncology*

# Endocrine Therapy of Breast Cancer: A New Look

### The Role of Receptor Assays

**Andrew Eisenberg, M.D.**
**Frank L. Meyskens, Jr., M.D.**

Editors:
Stephen E. Jones, M.D.
Robert H. Thoeny, M.D.

## INTRODUCTION

The first demonstration of hormonal control of breast cancer was made in 1896 by Sir George Beatson in a report describing the remission of advanced breast cancer in two women on whom he had performed bilateral oophorectomy..[1] Since then, adrenalectomy and hypophysectomy have been used to achieve similar results. These ablative therapies are aimed at removing the specific hormonal factors to which breast cancer may be responsive. (Figure 1)

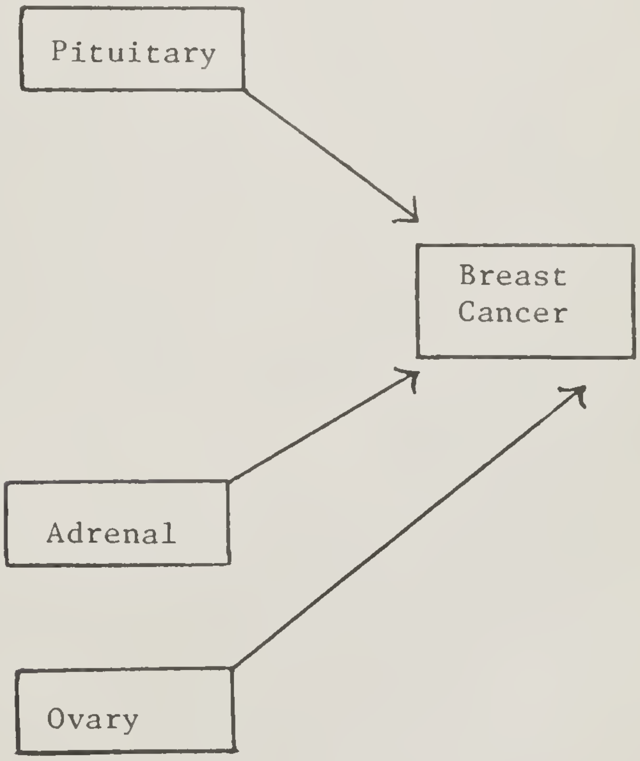

**Figure 1.—Hormonal influences on breast cancer.**

From: Section of Hematology and Oncology, Department of Internal Medicine, University of Arizona Health Sciences Center, Tucson, Arizona 85724.

Oophorectomy removes estrogens as a stimulus of tumor growth in breast cancer. The adrenal glands are a source of weak androgens that arise as intermediates in the production of glucocorticoids and mineralocorticoids. Also, androgens may generate significant concentrations of estrogen from peripheral conversion (in skin, fat, brain and breast tissue) and stimulate tumor growth. Hence, adrenalectomy may lead to tumor regression by removing both androgens and estrogens. The pituitary gland makes a variety of growth-promoting peptides and removal of these stimulators may be responsible for response to hypophysectomy. The role of prolactins remains especially controversial.

In contrast to ablative therapy in premenopausal women, regression can be achieved in postmenopausal women with breast cancer by additive hormonal therapy — the administration of estrogens, androgens, progestins, or glucocorticoids. The exact mechanism by which additive hormonal therapy causes objective remissions is not known.

In the past, the choice of endocrine therapy for an individual has been largely empirical, guided by certain clinical features such as menopausal status, disease-free interval, site of the dominant lesion, and response to previous endocrine therapy. Regardless of the type of endocrine therapy employed, objective tumor regression occurs in only 20%-40% of patients with breast cancer who are chosen for this treatment on the basis of these clinical criteria.[2] Since combination chemotherapy with cytotoxic drugs can lead to objective remission in more than 50%-60% of patients, oncologists are now more likely to recommend chemotherapy as the treatment of choice for the first recurrence of breast cancer than endocrine therapy. However, recent advances in the understanding of the role of hormone receptors and intratumor endocrine biochemistry have begun to allow a more rational approach to the use of endocrine therapy, and currently at least one type of assay is available which improves the clinician's ability to predict a patient's response to this mode of treatment. A discussion of recent developments in this area is presented in this paper.

**Estrogen Receptors**

The ability of tissue to take up and retain steroid hormones was first recognized in human breast cancer in 1961 by Folca et al[3] who observed that the tumor metastases of patients responding to adrenalectomy concentrated a larger fraction of $^3$H-hexestrol (injected into the patient prior to surgery) than those of patients who failed to respond. This observation suggested that uptake of $^3$H-hexestrol was related to adrenalectomy response. In the late 1960's estrogen receptors (ER) were detected and characterized in human tumors (Figure 2). They appeared to be essential for the specific uptake of estrogen by these tissues.

The proposed steps in the interactions of hormones with cells with hormone receptors (target cells) are illustrated in Figure 2 and are as follows (see reference 4):

1) **Uptake Step**: Estrogen (E) enters the target cell by passive diffusion and combines with the cytoplasmic form of the receptor protein (R).
2) **Transformation Step:** Temperature - dependent change leading to a complex (E-R$^1$) distinguishable from the complex formed in the uptake step (E-R).
3) **Translocation Step:** The transformed complex migrates to the nucleus (E-Rn).
4) In the nucleus, the complex binds to acceptor sites presumably in the chromatin of the target cell.
5) RNA polymerase activity is stimulated, resulting in an elevation of RNA synthesis, which is then transported to the ribosomes in the cytoplasm and stimulates protein synthesis.
6) The presence of the receptor for progesterone depends in some manner on an intact estrogen response system.

It has been proposed that when malignant transformation occurs, the cell may retain all or only some of the normal population of receptor sites. If the cell retains the receptor sites, its growth and function, like that of the normal cell, could potentially be regulated by its hormonal environment. If the cell loses the receptors as a consequence of its malignant transformation, it is no longer recognized as a target cell by circulating hormones and endocrine control is abolished. This implies that the presence of specific receptors in mammary tumor tissue may indicate hormone dependence and identify the 20%-40% of patients who will actually benefit from endocrine therapy. Clinical correlation studies of the presence and role of ER in mammary tumors are now underway.

By various assays used, it appears that between 50% and 75% of the breast carcinomas examined contain specific estrogen receptors. The absolute amount of receptor varies considerably from tumor to tumor by 100-fold. (The number of estrogen receptors is expressed as femtomoles [$10^{-15}$ moles] of $^3$H-estradiol bound per mg of cytosol protein. A value of $>3$ fmols. is usually considered positive.) The proportion of tumor cells to surrounding connective tissue and adipose cells does not appear to be correlated with the variation in estrogen-binding capacity. Until recently, no obvious histologic features of breast cancer specimens have been found that might explain the variation in levels of estrogen. However, a strong association between ER positivity and invasive lobular carcinoma has been described, while a low frequency of ER positivity is seen in tumors with a prominent local lymphocyte reaction.[2]

The amount of endogenous estrogen must also be

Table 1

PRESENCE OF ESTROGEN RECEPTOR AND RESPONSE TO ENDOCRINE THERAPY*

| | Frequency of Response | | |
|---|---|---|---|
| | All patients [Total No. of trials] | ER + patients | ER- patients |
| Response to surgical ablation (castration, adrenalectomy, hypophysectomy): | 33% (211) | 55% | 8% |
| Response to additive therapy (estrogens, androgens, glucocorticoids): | 34% (170) | 60% | 8% |
| Response to miscellaneous therapy (antiestrogens, aminoglutethimide, etc.): | 27% (55) | 43% | 16% |

* Modified from McGuire (ref. 5).

considered, since it would occupy ER sites and make them unavailable for assay using conventional techniques. This may partially explain why the highest values for tumor ER are seen in postmenopausal patients and more negative results in premenopausal women.

At an international workshop in 1974, details of both ER assay procedures and clinical evaluation criteria were examined in 436 treatment trials in 380 patients from various institutions (see Table 1).[5] From this data and other clinical experience there remains little doubt that ER values can be helpful in predicting the results of endocrine therapy for metastatic breast cancer. When the tumor ER value is positive, the response to endocrine therapy is 55%-60%. In contrast, if a patient has a negative tumor ER value, the chance of tumor regression in response to endocrine therapy is minimal. This single piece of evidence when coupled with clinical prognostic factors should permit the practicing physician to select or reject endocrine therapy with considerable confidence.

Why do 45% of the patients with positive ER values not respond to endocrine therapy? Several possible reasons have been proposed.[2] First, tumors may contain a heterogeneous population of hormone-dependent and autonomous cell types and, therefore, express a mixed response to endocrine therapy. Second, the ER protein measured may be defective, preventing the induction of the incompletely known sequence of biochemical events ultimately leading to tumor regression with hormone therapy. Third, specific nuclear acceptor sites for receptor are required for hormone action, and absent or defective sites would lead to insensitivity to ER. Fourth, free nuclear ER may be present, stimulating cell proliferation in the absence of circulating estrogen. Fifth, the role of other hormone receptors must be considered. After the demonstration of estrogen receptors, attempts were made to identify and define the role of other hormone receptors, including androgen, prolactin, glucocorticoid, and progesterone receptors. Much has been learned recently about the progesterone receptor and its interaction with the estrogen receptor.[4]

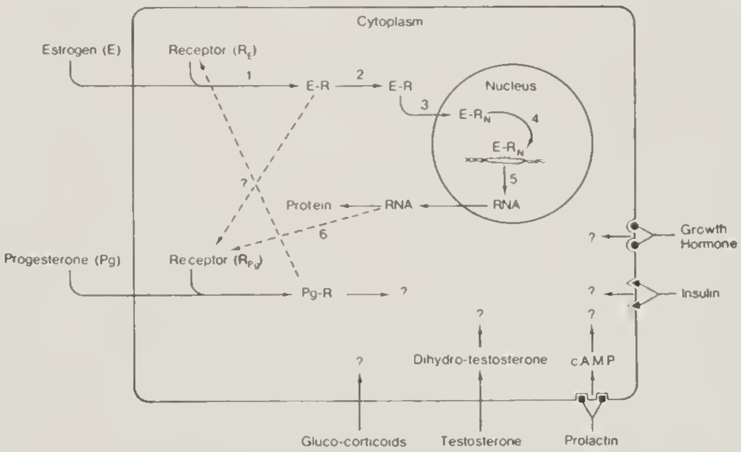

Figure 2.—Proposed interactions of estrogens and progesterones with breast tissue.

**Progesterone Receptors**

Progesterone is known to play a role in tumor growth and it can produce regressions in human breast tumors, particularly when used in combination with estrogens (Figure 2). Estrogen and progesterone may exert feedback control on each other at the target tissue. Pretreatment with estradiol enhances tissue sensitivity to progesterone and is correlated with increased progesterone receptor (PgR) levels. Progesterone, in turn, may modify cytoplasmic ER and redirect the ability of the cells to respond to estradiol. Evidence also suggests that there are interactions between progesterones, androgens, and glucocorticoids, and their receptor sites.

Recently, it has become possible to measure PgR using the radiolabelled synthetic progesterone $_3$H-R5020. Using this assay in mice, it has been possible to show that in mammary tumors, estrogen exerts control of PgR. Thus, PgR could be used as an indirect marker of estrogen activity and an intact estrogen response system.

In humans, the presence of ER is a necessary but not sufficient marker of hormone dependence. Since the ER is only the initial step in the pathway from

Table 2

PRESENCE OF ER AND PgR
AND RESPONSE TO ENDOCRINE THERAPY*

| Assay Results | No. of Patients | Frequency of Response |
|---|---|---|
| ER-, PgR- | 11 | 0% |
| ER-, PgR+ | 0 | - |
| ER+, PgR- | 18 | 39% |
| ER+, PgR+ Total | 25 | 64% |
| Primary tumor | 9 | 37% |
| Metastatic tumor | 16 | 81% |

* Modified from McGuire et. al. (ref. 2) ER = estrogen receptor; PgR = progesterone receptor.

hormone binding to ultimate cellular response, a product of hormone action (PgR) would seem to be a better marker of endocrine responsiveness than the simple presence of ER. The likelihood of positive PgR in a tumor increases with increasing ER content.[2,5] As is the case for ER, primary tumors are more likely to have PgR than metastatic tumors, suggesting perhaps that in dedifferentiated tumors, estrogen receptors are lost. There is limited clinical data to support a role of PgR in predicting response to endocrine therapy (see Table 2).[2] In these clinical trials, patients whose tumors had neither measurable ER nor measurable PgR did not respond to endocrine therapy. There was a higher response rate in patients whose tumors had positive assays for both ER and PgR than for those with positive ER only. Particularly when the assays were performed on metastatic tissue, the measurement of PgR improved selection of ER positive responsive tumors. Investigation is necessary to further define the role of the PgR in predicting tumor response to endocrine therapy.

### Future Directions

As assays for other hormone receptors (androgen, prolactin) become available, their role in selecting patients for endocrine therapy will also be evaluated. The inter-relation of these hormone receptors remains to be elucidated.

Other areas of investigation in endocrine therapy of breast cancer include the use of antiestrogens (tamoxifen, nafoxidine) which decrease the specific uptake of estrogens[6] and the use of chemical adrenalectomy (aminoglutethimide and a glucocorticoid in combination).[7] These methods of endocrine manipulation are likely to be effective only in tumors with intact receptor systems.

Combinations of endocrine therapy and chemotherapy are being explored for the treatment of advanced disease[8,9] and the adjuvant therapy of high risk primary disease. At the University of Arizona there are active trials evaluating the combination of tamoxifen, adriamycin and cyclophosphamide (TAC) in patients with metastatic disease and in patients with advanced local disease (stage III). The role of ER in predicting response to therapy is also being evaluated in these studies.

### Conclusions

Estrogen receptor analysis is now available through commercial laboratories.* It should be routinely obtained at the time of mastectomy and/or at recurrence if tissue is readily accessible for biopsy. Women whose tumors have no ER should not undergo any form of endocrine therapy. Those with a substantial concentration of ER should receive a trial of endocrine therapy at the time of recurrence. Currently recommended endocrine therapy has not changed in the recent past. Surgical ablation of estrogen- or estrogen-precursor-secreting organs is indicated in premenopausal and perimenopausal patients. In late postmenopausal patients high-dose estrogen therapy is recommended.

Progesterone receptor assays are also available commercially. However, the role of this receptor is still being evaluated, and therapeutic decisions should not, at present, be based on the results of these assays.

The further understanding of the role of hormone receptors and intratumor endocrine biochemistry should lead to further refinements in hormonal therapy and combined chemo-hormonal therapy for breast cancer.

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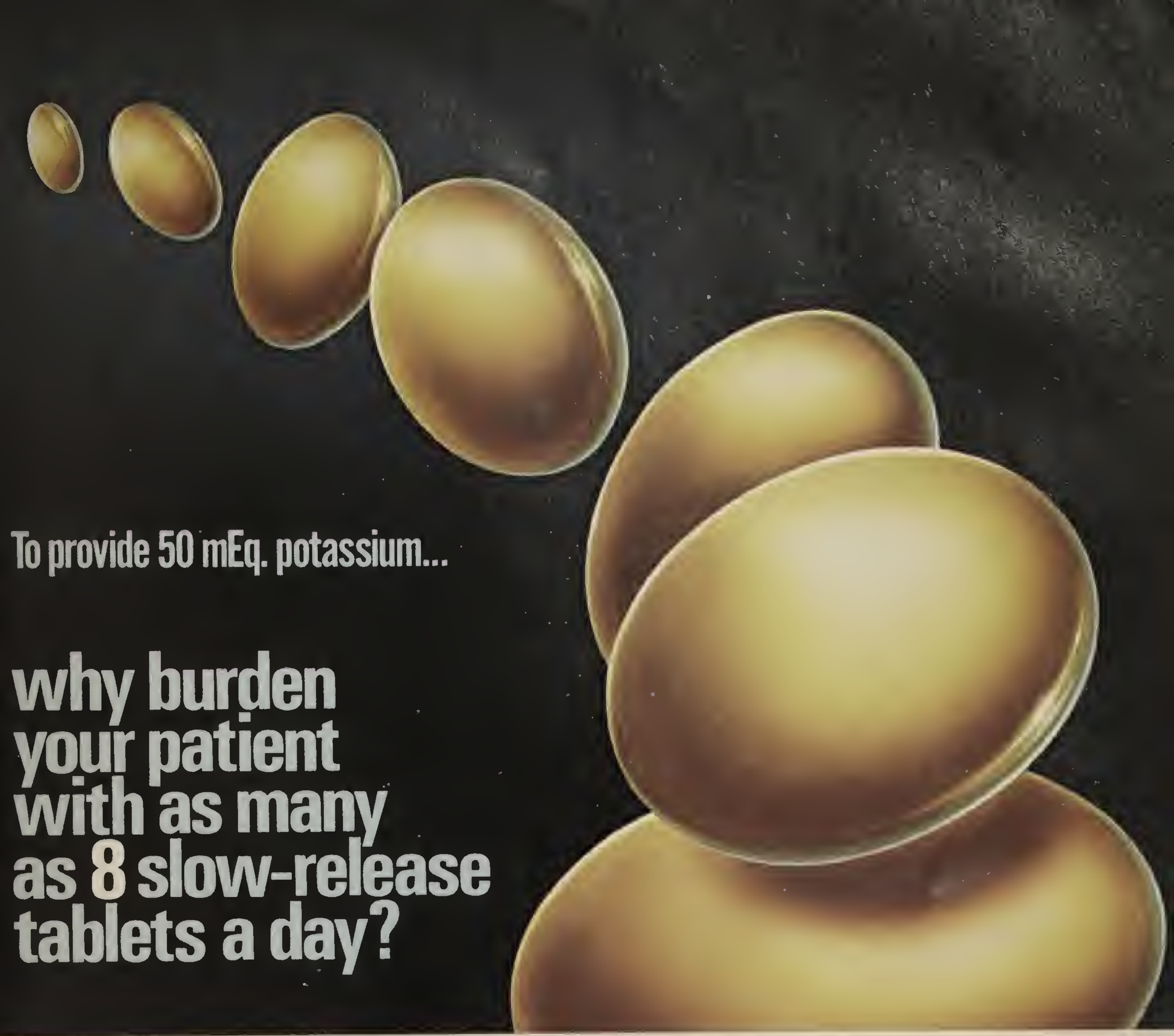
*The following laboratories will do ER analysis: Upjohn Laboratory Procedures, Inc., 6330 Variel Avenue, Woodland Hills, California 91364; Bioscience, 7600 Tyrone Avenue, Van Nuys, California 91405; Nichols Institute, 1300 South Beacon, San Pedro, California 90731. One gram of fresh tumor (which should be rapidly frozen after removal of all fat, blood vessel, and non-endocrine tissue) is required for the assay.



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Parenteral administration is not recommended in the presence of hypotension or tachycardia.

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Ophthalmology

# What Physicians Want To Know About the Retina

Alvin G. Folk, M.D.

Editor:
Robert Rubenzik, M.D.

Ophthalmoscopic examination enables the physician to see the terminal portion of the vascular bed, namely, the retinal arterioles, capillaries, and venules. This is important not only to the ophthalmologist, but to all physicians. I have surveyed a number of internists and general practitioners with the idea of determining what information regarding the retina would be most useful to them. Neurologists view the optic nerve as an extension of the brain. Internists are often concerned with the vascular manifestations of diabetes and hypertension. Family practitioners often raised the question of whether or not to dilate the pupils. The information presented here is intended as a quick review for non-ophthalmologists.

Dilation of the pupil is necessary when a detailed examination of the peripheral retina is to be made. One is usually safe in using Phenylephrine 10% (Neo Synephrine) or Tropicamide 1% (Mydriacyl) for dilation. One must occasionally forgo dilation if the patient is known to have a tendency toward angle closure glaucoma, or if intracranial hemorrhage is suspected, since a fixed dilated pupil would complicate neurologic evaluation.

The chief complaint in retinal disease is visual loss. No pain fibers are found in the retina. Stimulation of the retinal nerve fibers results only in the perception of light. Some causes of visual loss are shown in Figure 1. The signs, symptoms and prognosis of some retinal disorders is shown in Figure 2.

Ophthalmologists often find it necessary to call upon other physicians to aid in the workup of systemic disease. Amaurosis Fugax (fleeting episodes of visual loss) is generally due to embolic phenomena or vascular insufficiency. The workup should include a complete physical examination, including auscultation over the carotids for bruits, EKG, hematocrit, and possible angiography. Vascular occlusion resulting in longer lasting visual loss also warrants serial BP determinations, glucose tolerance test, serum triclycerides, cholesterol, FTA-ABS, CBC, platelet count, prothrombin time, serum protein electrophoresis and ESR.

Floaters in the field of vision is a common complaint, usually due to separation of the vitreous from the retina. No treatment is needed, and the

Figure 1.

CAUSES OF VISUAL LOSS

| LOCATION | SUDDEN | GRADUAL |
|---|---|---|
| Optic nerve | Optic neuritis (methanol, Multiple sclerosis) | Optic atrophy (traumatic, glaucoma) papilledema (is untreated) |
| Macula | Commotio retinae (traumatic) | Senile macular degeneration |
| Retinal vessels | Vascular occlusions | Diabetic retinopathy with macular edema<br>Hypertension |
| Peripheral retina | Retinal detachment | Retinoschisis |

From: 2916 N. Third St., Phoenix, AZ 85012.

Figure 2.

SOME COMMON RETINAL DISORDERS

| DISEASE | SYMPTOMS | SIGNS | PROGN'SIS |
|---|---|---|---|
| Senile Macular degeneration (Leading cause of blindness in U.S.A.) | Gradual loss of vision | Macular scaring, hemorrhage and leakage | Untreated: Gradual deterioration. Treated with laser: 30-50% chance of improvement |
| Diabetes (2nd cause of blindness in U.S.A.) | Visual loss hemorrhage (sudden)<br>Edema (gradual) | Microan'isms exudates blot hemorrhages neovascularization, vitreous hemorrhage | Variable |
| Hypertension | None | Grade I att arterioles<br>Grade II flame hemorrhage<br>Grade III cotton wool spots<br>Grade IV papilledema | Related to BP & damage to other organs |
| Arterior Sclerosis | None | Retinal arterioles are wider, resemble silver wires or copper wires.<br>A-V nicking | Irreversible |
| Retinal Detachment | Floaters, flashing lights | Elevated, grey retina | Untreated: Generally deteriorates<br>Treated: Excellent with scleral buckling procedure |

prognosis is excellent. When the patient also complains of flashing lights, a retinal tear must be suspected and a prompt referral is in order.

When he introduced the ophthalmoscope in 1850, Helmholtz opened up new possibilities of observing the vascular tree in vivo. Examination of the retina enables us to recognize many disease states which may progress to blindness or serious systemic disease if not treated.

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*Pediatrics*

# Congenital Infection In the Premature Infant: Trials and Tribulations

Cecil F. Michael, Jr., M.D.

Editor:
Melvin Cohen, M.D.

The complications of premature birth are numerous. This contribution deals with the difficulties of diagnosing and treating congenital infection in such a setting. The discussion is based upon the case history which follows and nicely covers the differential diagnoses which need to be considered.

## CASE PRESENTATION

Baby Boy P. was a 995 gm product of a 28-week gestation pregnancy to a gravida III para II abortus 0 22 year old Caucasian woman. Pregnancy was entirely uneventful until she had PROM 23 hours prior to delivery and temperature of 38.6° at birth. The baby presented as a footling breech and was delivered vaginally through a partial placeta previa. The one and five minute apgar scores were 4/6, and he was immediately resuscitated with 100% $0_2$ via ET tube, given packed red blood cells and $NaHCO_3$ for hematocrit of 38 and shock, and given umbilical arterial and venous catheters.

Family history was unremarkable except that the mother's two previous children were premature.

Physical exam was remarkable for marked edema and bruising of lower extremities, and gestational assessment was 28 weeks. Initial chest x-ray revealed clear lungs. Initial lab revealed WBC of 3100 with 6% segs, 6% bands, 88% lymphs, platelet count of 55,000, hemoglobin of 15.4 and hematocrit of 46, PT of 20.0 secs. with a control of 12.0 secs, PTT of 61 secs, and peripheral blood smear revealing schistocytes and fragmented red cells of various sorts.

**Problem #1 - Cardiorespiratory**

The baby required mechanical ventilation with pressures up to 27 cm. $H_20$, rate of 25/min., and 100% $0_2$ on first day of life, but was weaned to continuous positive airway pressure of 4 cm $H_20$ and 35% $0_2$ by day 3. He had a left tension pneumothorax on day 2, which was treated by chest tube insertion. He continued to have apneic and bradycardic spells requiring continued ventilation at low rates and low pressure until he was two weeks of age. He never had classic x-ray findings of hyaline membrane disease. X-rays during the second week of life revealed opacifications in the right lung, increasing pulmonary vascularity was noted at three weeks, and an enlarging heart was noted at five weeks of age. He had diffuse rales and retractions throughout his life, and

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This abridged Pediatric Clinical Pathologic Conference was presented on August 30, 1977 at the Grand Rounds of the Phoenix Hospital's Affiliated Pediatric Program. Dr. Michael is a senior resident in the pediatric program at St. Jospeh's Hospital and Medical Center, 350 West Thomas Rd., Phoenix, AZ 85013.

required F10$_2$ of at least 45% from two weeks of age until five weeks when he became progressively lethargic, apneic and bradycardic, and died. Isuprel was used intermittantly for bronchospasm.

**Problem #2 - Hyperbilirubinemia**

The baby was noted to be icteric by six hours of age. The mother was B+ and the baby was O+, Coombs negative. He required six two-volume exchange transfusions during the first week of life. Total bilirubin was up to 15.6 mg%, and the free bilirubin was above 0.10 mg% on several occasions with highest being 0.16 mg%. At times the liver was felt to be mildly enlarged.

**Problem #3 - Hematologic**

After his initial CBC (above), his WBC stabilized at 3,100 - 7,700 with 40-57% segs and 30-50% lymphs. He continued to have fragmented RBC's on peripheral smear during his entire hospital course. Except for one platelet count of 173,000 on the first day of life, he had 10-40,000 platelets/mm$^3$ consistently (first noted on day 3) despite frequent platelet transfusions. The baby's PT was 13.5 sec. on day 1 and 15 secs. with a control of 12.5 secs. on day 4. Free serum hemoglobin levels were increased at 89 and 87 mgs% (nl 0-50) during the third week of life, with grossly pink serum and urine. He had intermittant hematuria, gram positive stools, and oozing from heelsticks. Abdominal x-rays were normal. Liver-spleen and renal scans were entirely normal. Reticulocyte counts were 0.9% and 9.0% on two occasions. The baby required frequent transfusions of packed RBC's up to the day of his death. On that day a decrease in hematocrit from 35 to 29 was noted despite no apparent source of blood loss.

**Problem #4 - Neurological**

The baby was always somewhat lethargic and was evaluated by neurologists at 17 days of age because of continued apneic spells and a drop in hematocrit from 48 to 40 despite administration of packed RBC's. The baby was felt to be depressed secondary to birth asphyxia and/or intracranial hemorrhage. Computerized axial tomography scan revealed mild intraventricular hemorrhage and mild hydrocephalus. Over the next two weeks, the baby had occasional dusky spells, apneic spells, and feeding residuals without apparent cause, as well as myoclonic seizures and progressively decreasing activity and tone. He was treated with phenobarbital for three weeks with blood level of 1.8 mg/100 ml.

**Problem #5 - Infection**

All urine, blood, CSF, and ET cultures were negative, except for one ET culture at three weeks which grew Candida albicans. Patient was treated at various times with ampicillin, chloramphenicol (with adequate, non-toxic blood level), colistin, and prednisone.

### Discussion by Dr. Cecil F. Michael, Jr.

The case under discussion involves a premature infant with the pregnancy complicated by maternal fever and prolonged rupture of membranes.

It would be difficult, if not impossible, in the time available to adequately cover most of the potential complications associated with severe prematurity, even as they apply to this infant. However, an attempt will be made to briefly discuss the problems encountered in the treatment of this child, with special emphasis on the hematologic abnormalities observed during his clinical course.

As noted under Problem #1, the child initially required ventilation, using respiratory settings consistent with the treatment of respiratory distress syndrome or shock lung; both of which are compatible with the initial presentation of this infant. It is further noted however, that he required ventilation with high rates, pressures, and oxygen concentrations for a relatively short period of time, and never had classical x-ray findings of hyaline membrane disease. Following treatment of a tension pneumothorax, the patient was weaned to a CPAP of 4 cm $H_2O$ and 35% oxygen. Having this information, it would be expected that the child could be extubated relatively soon. Such was not the case here, as the infant required continued ventilation for apneic episodes.

A number of factors have been implicated as causitive agents in neonatal apnea, or at least have been shown to be associated with an increased incidence of apneic episodes. Included among these factors are immaturity of the nervous system and hypoxemia, the latter causing reduced oxygen delivery to the respiratory center in the brain stem. Anemia may also be associated with neonatal apnea, whether it be from hypoxemia or reduced blood volume. There are some infants whose apnea is a manifestation of seizures. Also, neurologic abnormalities and apnea may be co-existing symptoms of an underlying problem such as hypoglycemia or sepsis. Apnea may also be related to such factors as REM sleep, decreased sensory input, vagal reflexes, and other mechanisms.

It appears reasonable in this case to evoke hypoxemia as the most likely mechanism for the production of apnea. Results of blood gases are not given, but it is noteworthy that the patient required oxygen concentrations of at least 45% from age two to five weeks, and that he had diffuse rales and retractions.

As mentioned previously, one of the mechanisms resulting in decreased oxygen delivery to the respiratory center is anemia, which was a persistent problem in this infant's case. Anemia in the neonatal period can result from hemorrhage, hemolysis, or failure of red cell production. While blood loss may have played a role in the production of the anemia observed initially in this infant, there is no evidence of significant blood loss during the remainder of the clinical course. While internal hemmorrhage may go undetected clinically (especially if it occurs within the abdominal cavity), one would not expect to find abnormalities on the peripheral blood smear, or a significant degree of hyperbilirubinemia; especially not in the first few hours of life, as was observed in this infant.

It becomes increasingly evident that the anemia in this infant is secondary to a hemolytic process (increased red cell destruction), as opposed to a process involving decreased production of red cells. Supportive evidence includes: the early onset of severe hyperbilirubinemia, persistence of fragmented red cells on peripheral smear, and an elevated reticulocyte count of 9% on one occasion. With this in mind, it should be noted that hemolytic disease in the newborn can be classified into three broad categories: isoimmunization, congenital defects of the red cell, and acquired defects of the red cell.

An isoimmune mechanism as a cause of hemolytic anemia is unlikely in this case, as there is no apparent blood group incompatability between mother and infant, and the Coombs test was negative.

Congenital defects of the red cell include those associated with enzymatic defects and those characterized only by alterations in red cell morphology (membrane abnormalities). These may be excluded as diagnostic possibilities since the child received six two-volume exchange transfusions in the first week of life in order to prevent the complications of severe hyperbilirubinemia. Presumably, the infant's blood would then be composed almost entirely of normal donor red cells, which would not be subject to continued hemolysis unless the cause of destruction was extrinsic to the red cell. Several exchange transfusions would also be an effective treatment for an isoimmune process, which may have gone undetected by the usual laboratory tests. The same reasoning could also be applied in ruling out hemoglobinopathies as a cause of the hemolytic anemia, which rarely manifest themselves in the first week of life.

Having established a mechanism extrensic to the red cell as an underlying cause of the persistent anemia, attention should then be turned to the acquired anemias.

One of the more frequent causes of acquired hemolytic anemia in the neonatal period (and important to diagnose early) is sepsis. The hemolytic anemia associated with bacterial sepsis is usually characterized by the appearance of normochromic, normocytic red cells on peripheral smear, and the jaundice by elevations of both the conjugated and unconjugated bilirubin fractions. More important, however, is the necessity to obtain the appropriate bacterial cultures of blood, urine, and cerebrospinal fluid. This is especially important in this case, with the knowledge that the mother was febrile at the time of delivery, and the membranes were ruptured for 23 hours prior to delivery. As is noted under Problem #5, all cultures of this patient were negative with the exception of Candida in the endotracheal tube at 3 weeks of age. Although Candida has been associated with bronchopneumonia in the neonatal period, it is almost always characterized by a fulminate course with death resulting in a few days. Therefore, this is most likely an opportunistic infection secondary to treatment with various antibiotics.

Other infections have been associated with hemolytic anemia in the newborn period, most notably those of the TORCH complex and various other viruses.

The hematologic manifestations of congenital syphilus, cytomegalic inclusion disease, and toxoplasmosis are similar, but the diseases can be differentiated by the appropriate laboratory studies (positive serology in syphilus, viral titers, and cytomegalic inclusion cells in urine).

In this infant's case, no mention was made of splenomegaly, which is virtually always present in these congenital infections; as is hepatomegaly, which, in fact, was present. However, one cannot assume that splenic enlargement was not present since the spleen must be two to three times the normal size to be palpable, and the degree of enlargement of this organ may be difficult to assess in a premature infant.

It would be helpful to know whether or not this baby had any of the other clinical stigmata of the TORCH complex (i.e., microcephaly, cataracts, chorioretinitis, intracranial calcifications on x-ray, etc.). Although positive findings would provide supportive evidence of intrauterine infection, their absence does not rule out such infection since these characteristics are not invariably present.

Other rare causes of hemolytic anemia in the newborn period include osteopetrosis (or marble bone disease), which is associated with thrombocytopenia, hepatosplenomegaly, and macrocephaly. The diagnosis is confirmed by characteristic bone changes on x-ray, which were apparently not evident in the patient's case. Also very rare as a cause of hemolytic anemia in the newborn is malignant melanoma that has spread from the mother to the fetus. Obviously, there was no history of that in this particular case, and is mentioned only for the sake of completeness. The possible causes for the hemolytic anemia observed in this infant can be narrowed down further if one considers the continued observations of schistocytes and/or fragmented red cells on peripheral smear, throughout the entire hospital course. The presence of this particular morphologic abnormality implies a severe degree of physical injury to the red cell. Destruction of red blood cells in this manner may result from impact with abnormal surfaces, turbulent blood flow, shearing by fibrin strands, or platelet fibrin aggregates. These conditions may be seen with disseminated intravascular coagulation, microgangiopathies, cancer, hemangiomas, thrombosis, prosthetic heart valves, or in association with foreigh objects present in the vasculature. Thrombocytopenia may also be present under these conditions, either as an isolated finding or associated with a deficiency of clotting factors. Fragmentation anemia is also consistent with the finding, in this patient, of increased levels of free serum hemoglobin, and is indicative of a severe degree of intravascular hemolysis.

Having established that thrombocytopenia may be associated with fragmentation anemia, consideration will be given to the subject of neonatal thrombocytopenia.

The mechanisms of thrombocytopenia in the newborn infant are the same as in the child and adult — decreased production of platelets in the bone marrow and decreased survival in the peripheral blood. Platelet transfusions can serve a diagnostic as well as therapeutic purpose. In cases of thrombocytopenia due to decreased bone marrow production, transfused platelets produce an increase in the platelet count and can survive for several days. If the patient's platelets are being destroyed by extrinsic factors during circulation, the transfused platelets also have a decreased rate of survival, and the platelet count, if it rises at all, falls rapidly to pre-transfusion levels.

Bone marrow aspiration is usually possible even in the smallest of premature infants, and examination reveals decreased numbers of magakaryocytes in thrombocytopenix disorders secondary to decreased platelet production.

This particular patient did not have a bone marrow aspiration; however, he was given several platelet transfusions. The lifespan of the transfused platelets was markedly shortened, as indicated by the presence of platelet counts consistently below 40,000. Thus, it is safe to assume that the thrombocytopenia was secondary to descreased peripheral survival. In addition, it should be noted that in most cases of congenital magakaryocytic hypoplasia, there are related congenital anomalies and pancytopenia.

Conditions associated with thrombocytopenia in the neonate with decreased peripheral survival as an underlying mechanism, but not associated with hemolytic anemia include the immune disorders. These disorders may be of the *isoimmune group* (platelet incompatibility), or of the *autoimmune group* — in which case antibodies against the mother's platelets (as might be seen in SLE or TIP) also attack the infant's platelets. Probable causes of increased platelet destruction (which may also be associated with hemolytic anemia) include: infection, giant hemagioma, thrombosis, DIC, or hemolyticuremic syndrome (microangiopathic hemolytic anemia). Thus, it is evident that there are several mechanisms which may be operative in the production of hemolytic anemia and thrombocytopenia.

It is of significance at this point, to discuss disseminated intravascular coagulation, since it may be a pathophysiologic process common to many underlying disease processes, especially in infancy. DIC is found frequently in sick newborns. It has been reported in association with sepsis, infectious with herpes, cytomeglovirus, rubella, and toxoplasmosis, as well as with disseminated fungal infections such as histoplasmosis. In addition to being associated with cavernous hemangiomas (as previously mentioned), it has been reported in newborns with neuroblastoma and hemolytic-uremic syndrome, which is probably the prototype of the idiopathic microangiopathic hemolytic anemia. The characteristic pathologic picture of DIC is widespread intravascular clotting, with fibrin microthrombi in the vessels of many organs. The clinical presentation is characterized by bleeding, thrombocytopenia, increased prothrombin time, and decrease in the levels of fibrinogen and increased levels of fibrin split products. This clinical picture was indeed observed in the infant under discussion, with the exception of absence of abnormalities in the clotting factors. However, some believe that DIC probably plays a role in fragmentation anemia even if the clotting factors are not reduced.

The essential feature here is that this infant exhibits the typical findings of microangiopathic hemolytic anemia, which is characterized by the presence of distinctively abnormal red cells (schistocytes and fragments), evidence of intravascular hemolysis, and in some instances, evidence of deficiency of platelets and of the clotting factors.

Turning to other considerations in this infant's case, it is important to further discuss the possible role of infection. As previously mentioned, this baby did not manifest the clinical characteristics of an intrauterine infection with a TORCH complex organism, although these infections have been reported in association with the hematologic manifestations alone. It is therefore important to exclude disseminated toxoplasmosis in this infant, with IGM levels, complement fixation tests, and Sabin dye tests. Possible infection with toxoplasmosis is of special significance here, with the knowledge that this organism is often characterized by severe hemolytic anemia and thrombocytopenia. It should also be noted that frequently, it is impossible to make a clinical differentiation between toxoplasmosis and cytomegalic inclusion disease, and the specific diagnosis is dependent upon the appropriate laboratory tests.

Disseminated fungal infection is also a significant consideration in this case. Congenital coccidiomycosis is almost unheard of, but there have been several reported cases of disseminated Cryptococcus infections in the neonatal period, which has a clinical presentation almost identical to that of toxoplasmosis with hepatosplenomegaly, chorioretinitis, intracranial calcifications, and hydrocephalus. Jaundice and pneumonitis may also be noted. Infection with Cryptococcus usually is acquired at birth, as it is sometimes an inhabitant of the female genital tract. Signs of infection appear several days to weeks after birth. In rare cases, evidence of the disease is present so soon after birth that intrauterine infection must be postulated. Diagnosis is by exclusion of CMV, and toxoplasmosis, as well as demonstration of the organism on smears of CSF and culture.

The other infection compatable with the findings in this case would be histoplasmosis, which is very rare in the neonatal period, but has been described, and when present, is almost always in the disseminated form. It is usually characterized by hepatosplenomegaly, pulmonary infiltrates of a non-specific nature, progressive anemia and thrombocytopenia, and occasionally jaundice. The histoplasmic skin test has too high an incidence of false positives and negatives to be helpful, and definite diagnosis is usually dependent upon isolation of the organism from peripheral blood, bone marrow samples, or liver biopsy. There are no reports of congenital histoplasmosis, and in fact all of the previous cases were acquired several weeks postnatally.

To summarize, this premature infant had initial problems related to shock and asphyxia, was stabilized, and subsequently developed a progressively down-hill clinical course. The infant's major problem was a persistent microangiopathic hemolytic anemia with an associated thrombocytopenia. Various entities associated with this hematologic abnormality in the neonatal period have been discussed, and when considered in conjunction with the clinical presentation, it appears that this patient suffered from an intrauterine infection.

As mentioned previously, toxoplasmosis seems most likely, although cytomegalic inclusion disease is also possible, and the two can be differentiated only by the appropriate laboratory tests.

Dr. Michael's Diagnosis:
Congenital infection — Toxoplasmosis or Cytomegalovirus

Pathologic Diagnosis:
Congential cytomegolovirus infection (viral inclusions apparent in lung, liver and kidneys)

## Radiology

# Case of the Month # 27

Harold Trief, M.D.

The patient is a 29 year old white female with a 4 month history of occasional dark clots in her stools, a 1 month history of fatigue and a 14 pound weight loss.

One week PTA, physical exam revealed palpable hepatosplenomegaly and supraclavicular adenopathy. Chest radiographs (Fig. 1) showed mediastinal widening bilaterally, thought to represent lymphoma or metastases. Supraclavicular node biopsy revealed adenocarcinoma. Barium enema (Figs. 2 & 3) was performed. Where is the probably primary carcinoma and what is the underlying disease process? The patient's father was thought to have had the same disease.

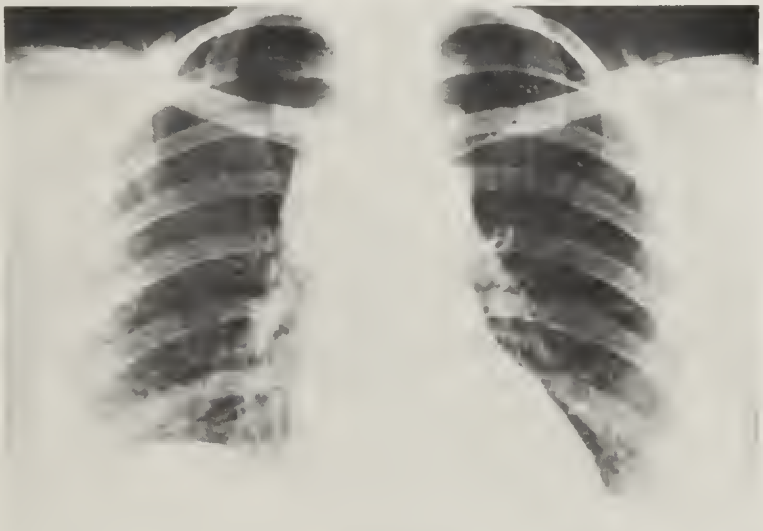

**Fig. 1: Chest**

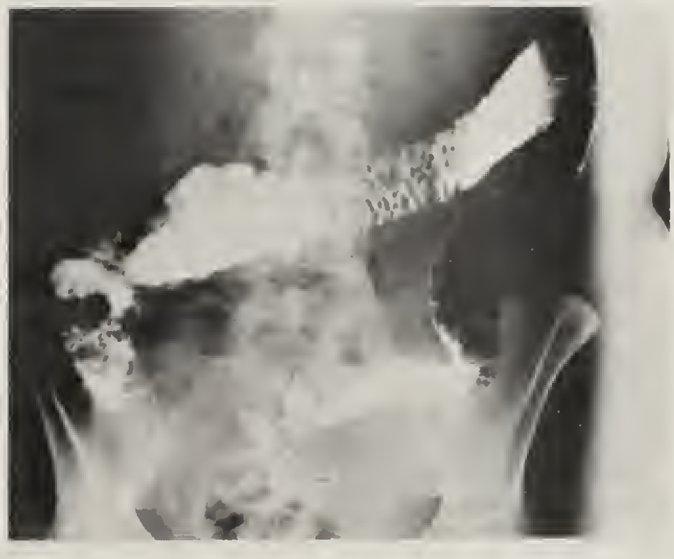

**Fig. 2: Post-evacuation radiograph of barium enema.**

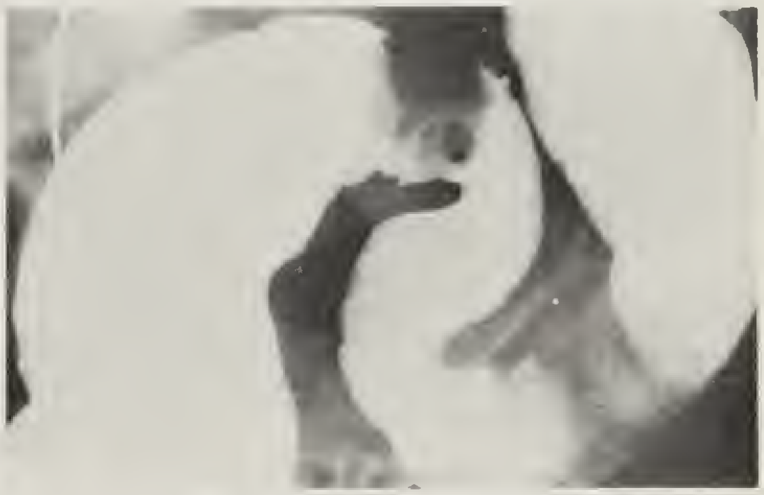

**Fig. 3. Spot film of sigmoid colon.**

From: Department of Radiology, University of Arizona Health Sciences Center, Tucson, Arizona.

## Familial Polypolis Coli and Adenocarcinoma

On the post-evacuation radiograph multiple small polypoid filling defects are seen representing numerous small polyps. On the spot radiograph with compression, a larger defect is seen representing the site of primary adenocarcinoma. Familial polyposis coli is the underlying disease process. It is transmitted as an autosomal dominant and therefore 50% of offspring will be affected. "Carpeting" of the large bowel with innumerable 1 to 2 cm. adenomatous polyps is usually seen. Some authors have seen associated filling defects in the terminal ileum, but most attribute these findings to reactive lymph node hyperplasia.

100% of patients will eventually develop adenocarcinoma and, therefore, the demonstration of growth in the polyps is highly suspicious. In the average disease course, polyps can usually be seen between the ages of 15-20, but symptoms don't start until about age 30. Unfortunately, at the time of initial diagnoses two thirds of patients already have carcinoma. Therefore, offspring of affected patients should have barium enemas as early as age 14 and colectomy done as soon as polyps are found.

Other polyposis syndromes have been described with varying degrees of similarity to Familial polyposis. Gardner's syndrome is thought by some authors to represent a variance in expression of the same genetic locus as familial polyposis.

In Gardner's, adenomatous polyps of the colon with high malignant potential are found. It also includes extracolonic manifestations: especially osteomata of the mandible and other bones and a tendency to form fibromas. Patients with this syndrome have a keloid forming tendency which could cause complications postcolectomy.

Peutz-Jeugers syndrome, on the contrary, represents the involvement of the small bowel with hamartomatous polyps with involvement of the colon and stomach in 25-30%. Peutz-Jeugers may in fact present as intussuception caused by these polyps. These patients do have a mild increased chance of developing adenocarcinoma of the small bowel and colon. Characteristically, affected patients show abnormal brown and black pigmentation of the lips and buccal mucosa, which often alerts clinicians to the diagnosis.

Other more rare polyposis syndromes include Turcots, with colonic polyps associated with CNS tumors and Canada-Cronkite in which polyps are found with ectodermal dysplasia.

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AM Surgery

# Treatment of Microtia: or What To Do With a Mal-Shaped Ear

Daniel B. Carroll, M.D.

This issue of Arizona Medicine presents the third in a series of articles on Plastic and Reconstructive Surgery. Due to the proliferation of new knowledge and techniques in the specialty, clinically oriented reviews will be written to enable physicians in other fields of medicine to keep abreast of new developments in plastic surgery as they relate to their own practices. By utilizing the talents of various practicing plastic surgeons as guest contributors, different points-of-view will be presented, and areas of controversy will be explored, allowing the reader to formulate his own opinions on different subjects. It is hoped that these reviews will also be valuable in providing material for continuing education studies. Comments and discussion from the readers is welcome and encouraged.
Jack A. Friedland, M.D., Editor

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From: 550 W. Thomas Rd., Phoenix, AZ 85013.

Microtia is defined in Dorland's Medical Dictionary[2] as "hypoplasia or aplasia of the ear". In almost all cases, this is manifested by incomplete formation of the external ear. In most cases this results in a vertical hemi-sausage remnant of the ear, with irregular masses of cartilage in the upper third or upper half (Figure 1.). Usually the ear is deficient in one or more dimensions and frequently with a loss of certain configurations of the ear. The incidence of this malformation is said to be one in 12,500 live births.[1]

Almost all cases of microtia have some elements of the first and second branchial arch syndrome (hemifacial microsomia). In a great many instances it is difficult or almost impossible to see any facial signs of this syndrome, particularly at an early age. However, occasionally with the growth of the child, these stigmata appear. In the more marked cases, there is a very visible distortion of the face due to hemiatrophy of the affected side, involving both the maxilla and mandible, the facial muscles thereof, and associated with a marked tilting of the occlusal plane to the affected side (Figure 2.). There may or may not be external ear tags, either in the pre-auricular area, and sometimes extending down on to the cheeks or on to the neck. There may or may not be some degree of macrostomia.

In all but the lesser types of microtia, there is no ear canal. The ossicles of the middle ear, so necessary for hearing, may be either markedly distorted or actually absent.

There have been reports of renal abnormality such as unilateral kidney, horseshoe kidney, seen in some children with microtia. In the Treacher-Collins syndrome there is often microtia associated with the syndrome.

Typically there is a decrease in hearing on the affected side of 30-50 decibels. Since bone conduction is still present, the hearing loss therefore represents the loss due to air conduction only. In almost all cases, with normal hearing present on the opposite side, it is now generally agreed that attempts to restore an ear canal, re-alignment and repositioning of the ossicles of the middle ear, and any other attempts at hearing restoration are futile. On the other hand, in the markedly lesser degrees of microtia, there may or may not be a diminution in hearing.

**Treatment**

Surgical restoration of the external ear should be delayed until approximately age five. However, I believe that it is excellent policy to see the baby in the nursery, and then report to the mother a treatment plan. Although admittedly this treatment is deferred for five years, the mother is told there is a definite plan, and that treatment is being deferred for some

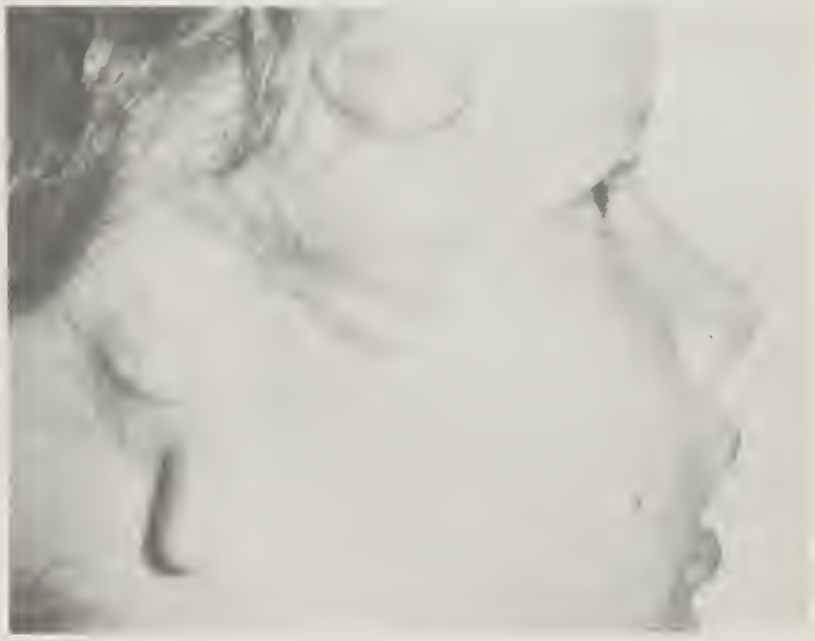

Figure 1
Pre-operative situation. Note "hemi-sausage" remnant of ear.

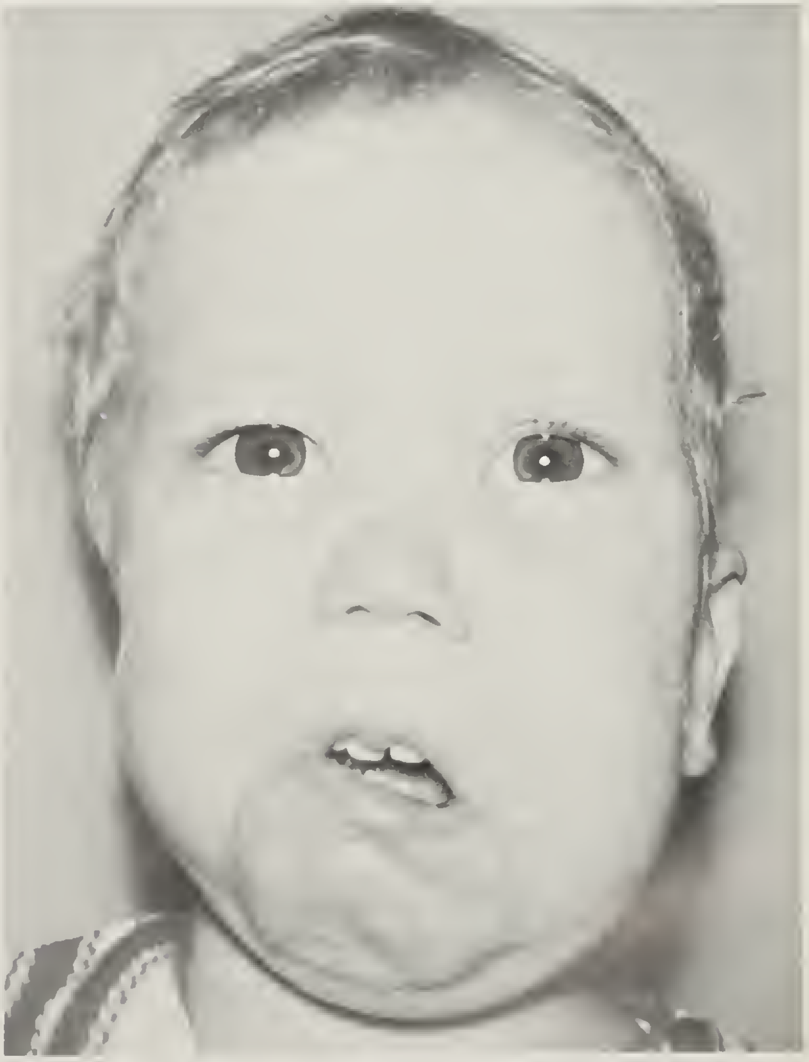

Figure 2
First and second branchial arch syndrome [hemi-facial microsomia]. Note hupoplasia of all elements of the affected side of the face, including maxilla, mandible, and soft tissue. Note tilted occlusal plane of teeth.

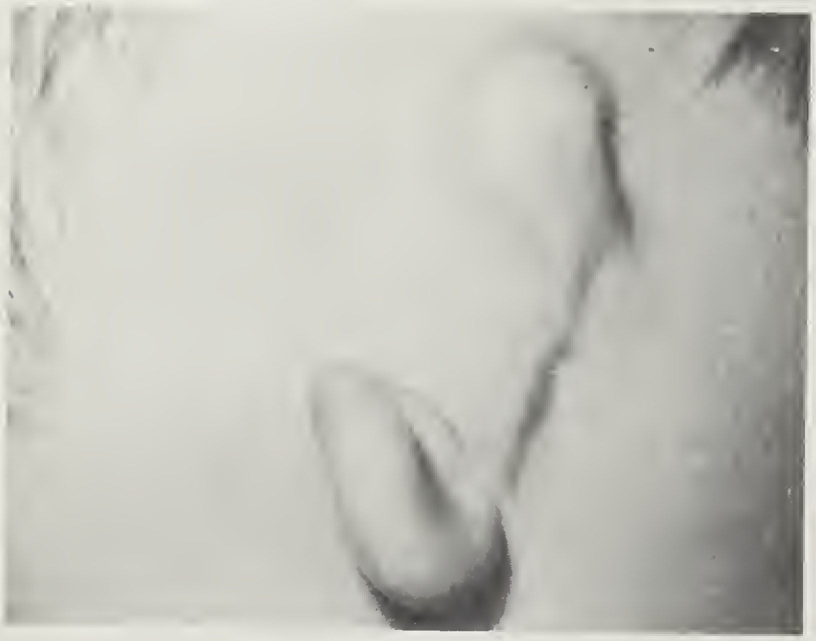

**Figure 3**
Post-operative initial procedure in which the lower two-thirds of microtic ear has been rotated posteriorly. This will now form the lobe of the reconstructed ear. This is the same patient as figure 1.

very specific reasons. This provides the mother not only her own internal solace, but also helps her ward off well meaning family members and friends who "will take the baby to a good doctor so that ear can be corrected immediately".

The reason for deferring the initiation for such treatment until age five is that we are trying to compromise on two opposite time periods: to have the ear as close to final size as is practical, and to complete the restoration by the time the child enters first grade (age six). At age six the ear of a child is approximately 85% of the final adult size.

Since the multi-stage procedure takes approximately a year, initiating the reconstruction at age five seems to effect a very good compromise between the two time elements mentioned above.

Occasionally a prosthesis is mentioned for such a defect. There are a multitude of objections for this, some of which will be listed below:

(1) Fabrication with a good color match is extremely difficult to obtain, particularly in the sunny southwest.
(2) It seems that the prosthesis color and/or material is such that there must be replacement of the prosthesis approximately every six months.
(3) Patient acceptance and faithfulness of wearing.
(4) Accidental dislodgement, particularly during wrestling, etc.
(5) Cost of all of the above.
(6) And most important — to place a prosthesis requires surgical excision of the protruding remnants of ear tissue. Thus, this method requires "burning your bridges behind you", a situation unacceptable to me considering the objections noted above.

This then leads us to surgical reconstruction. The method used by the author is a modification of the general techniques as prescribed by Tanzer.[3] These consist of a fourstage procedure, starting at age five years, as follows:

(1) This is a Z-plasty of the "hemi-sausage" to reposition and align the soft tissue portion that will eventually be lobule (Figure 3.). At the same procedure any pits or other abnormalities which will effect the final result are handles surgically at that time.
(2) Two or more months later is the stage at which the framework is inserted. This framework is obtained by removing sub-perichondrially the cartilages of the most (Figure 4.) inferior last two ribs anteriorly one side, plus the "rat tail" cartilage which is free floating immediately distal or inferior to it. This dissection and the formation of the framework requires a three-hour surgical procedure. The framework (Figure 5.) is formed and then inserted through the same pre-auricular scar resulting from the first procedure, after a pocket is developed in the area.
(3) Stage three is performed three or more months later. This consists of lifting up the entire posterior portion of the ear to provide a very deep sulcus. Into this is placed a post-auricular flap followed by a skin graft.

At this point we then have an ear that is a reasonably good substitute and replica of the opposite ear. It does not stand out as far from the scalp as the opposite side (probably beneficial). There is likewise practically no conchal depression available.

Therefore in stage four we provide a reduction otoplasty on the unaffected side to bring this back into a more symmetrical position. In the process of doing this operation we have some post-auricular skin that is removed. We deepen the concha on the reconstructed side and use the skin graft removed from the opposite ear to line the floor of this conchal depression (Figures 6 and 7).

Assuming no problems, the child will not require additional surgery. On the other hand, if there are any small revisions to be carried out, these can be done at some later time.

The above surgical format applies to the usual or typical form of microtia. In cases with atypical forms, a similar plan, but modified to fit the anatomic situation, is used. The same techniques can be modified for use in reconstructing traumatic losses of the ear.

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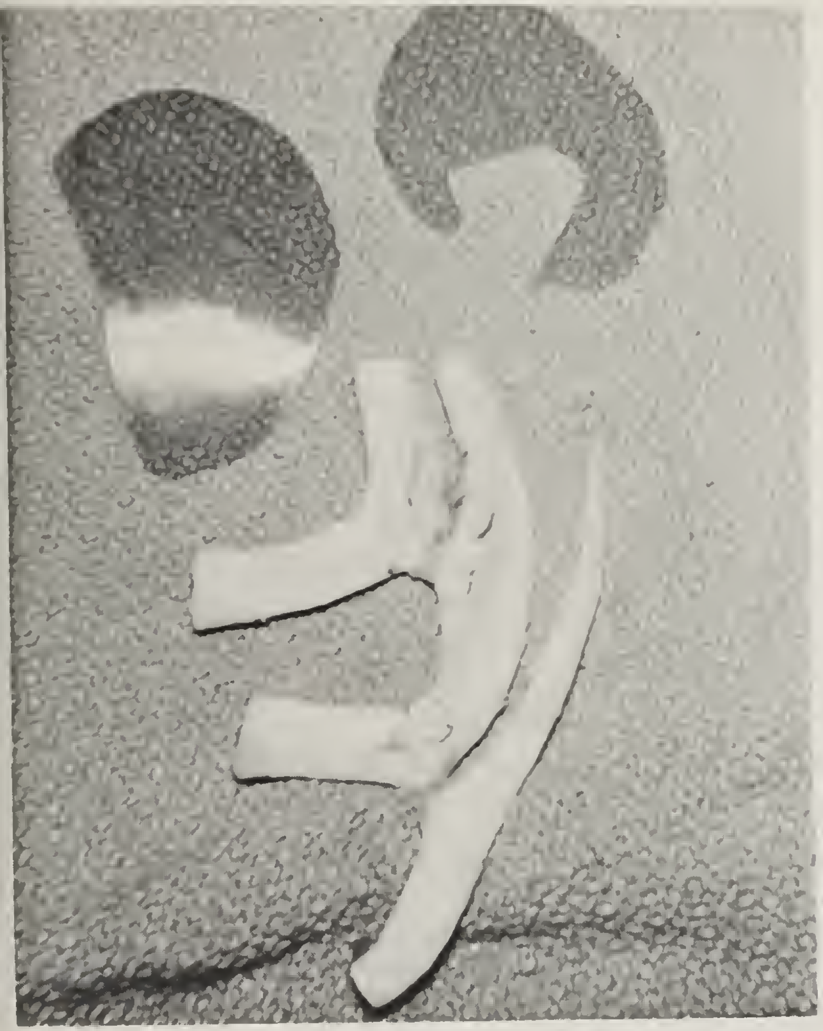

Figure 4
Cartilage removed sub-perichondrially. X-ray templates are taken from the opposite ear and are used in the construction of the framework.

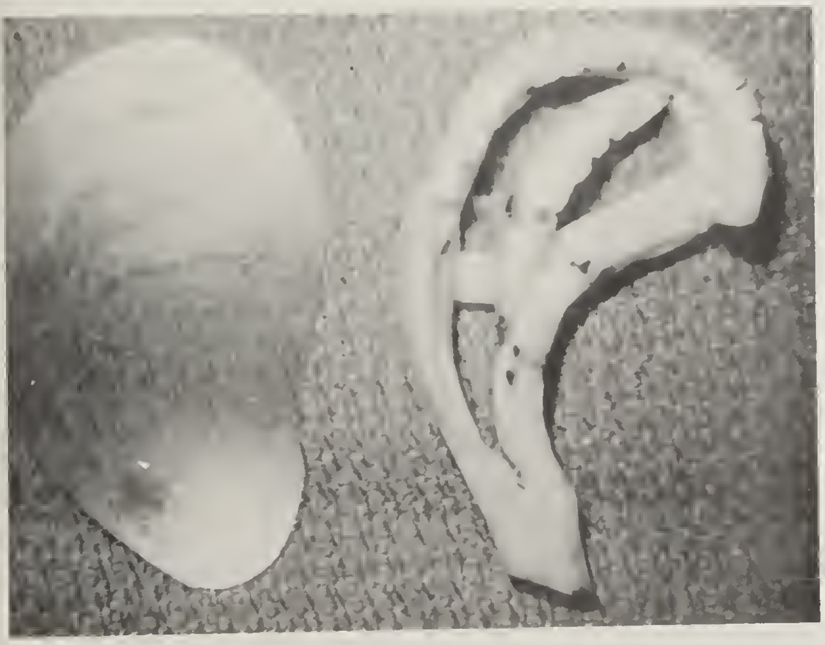

Figure 5
Framework made from cartilage such as that seen in figure 4. Note adjacent x-ray template used as a pattern. This is the same patient as seen in figures 1 and 3.

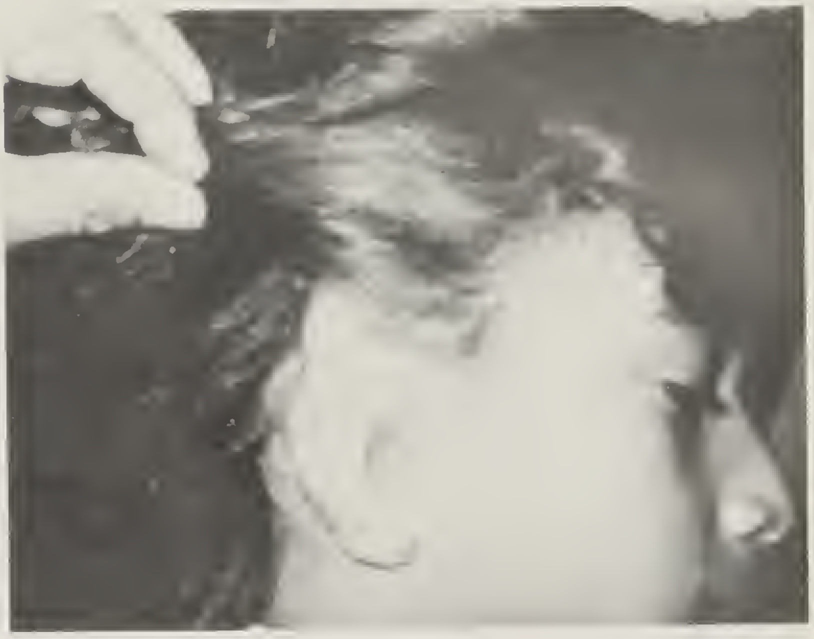

Figure 6
A reconstructed ear two years after completion of reconstruction.

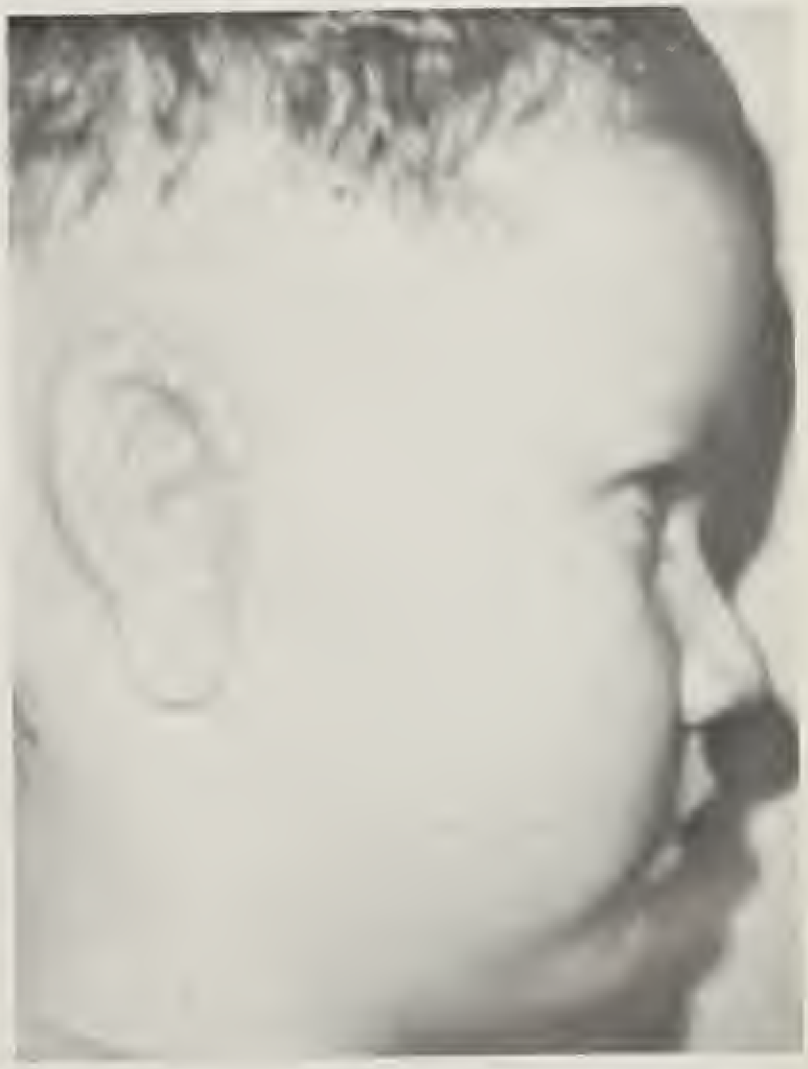

Figure 7
A reconstructed ear six weeks after reconstruction. Some cartilage had been exposed seven weeks post-operatively and a temporal flap was used to cover this, the scar seen in the temporal region. This secondary procedure permitted complete salvage of the ear. Same patient as in figures 1, 3 and 5.

U of A
Grand Rounds

# Primary Treatment of Breast Cancer: Surgery, Radiation Therapy and Chemotherapy

Richard E. Lloyd, M.D.

Editors:
Jay W. Smith, M.D.
Robert M. Hyland, M.D.

Breast cancer afflicts one (1) in seventeen (17) women during their life. In Arizona 600 women will be affected this year. The death rate for this disease has remained unchanged for the past 45 years, attesting to the lack of improvement in our therapy.

There continues to be much controversy over the proper mix of surgery, radiation therapy, chemotherapy and immunotherapy needed to achieve optimal cure rates for patients with operable disease. This review will offer suggestions for the most appropriate current management of patients with this disease.

Surgical management of breast cancer has until recent years been the only widely accepted therapeutic modality. The selection of patients for breast surgery generally is done by the criteria of inoperability developed by Haagenson.[1] The contra-indications are not absolute and many patients benefit from the removal of the diseased breast despite the presence of the unfavorable signs. Their presence, however, indicates a very remote likelihood of cure and should serve to limit the extent of surgery performed. It is palliative not a curative measure for these patients.

The principles upon which the surgical therapy of breast cancer are based were formulated in the late 19th century by William Halsted of Johns Hopkins. The concepts underlying the "Classic Halsted" radical mastectomy have been the basis for all of cancer surgery. His rational for the operation was based upon the belief that a growing tumor remains localized to the breast for a time and that at some instant, metastases to regional lymph nodes occurs. There then follows a period of time in which the tumor remains confined to the regional nodes with general dissemination only occuring late in the course of the disease.

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FIGURE 1.

**BREAST CANCER TREATMENT FAILURE RATE**
**(5 and 10 YEARS)**
**FOLLOWING RADICAL MASTECTOMY[3]**

**% TREATMENT FAILURES**

| PREMENOPAUSAL | AT 5 YEARS | AT 10 YEARS |
|---|---|---|
| All Patients | 47% | 54% |
| Negative Nodes | 21% | 25% |
| 1-3 Positive Nodes | 46% | 56% |
| More than 4 Pos. Nodes | 86% | 89% |
| **POSTMENOPAUSAL** | | |
| All Patients | 36% | 48% |
| Negative Nodes | 16% | 24% |
| 1-3 Positive Nodes | 52% | 68% |
| More than 4 Pos. Nodes | 74% | 84% |

The regional lymph nodes were viewed, according to theories proposed by Virchow, as effective barriers to the spread of cancer cells. The lymphatics were regarded as the channel for dissemination of cancer and spread via the blood stream was felt to be unimportant.

The anatomic bases for cancer surgery developed from these concepts required a proper cancer operation to consist of en bloc removal of the primary tumor, the regional lymphatics and lymph nodes. More cures would be expected if more extensive dissections were performed.[2] We now realize that the concepts underlying modern cancer surgery are to some extent incorrect and incomplete and that many patients with solid tumors have disseminated disease at the time of diagnosis. Despite the flaws in the rational for radical mastectomy, Halsted's procedure was of major importance in improving survival of patients who previously had been treated with imcomplete local resections.

That breast cancer is frequently a systemic disease at time of diagnosis is best shown by reviewing the results of radical surgery (Figure 1).[3] Ten years after radical mastectomy 54% of premenopausal and 48% of postmenopausal patients will have had recurrence of their disease, despite receiving an operation which has a high rate of local and regional control. Those with no lymph node involvement do best with 75% remaining disease free at ten years. However, the outlook for node positive patients is grim, 3 of 4 having recurrence by ten years and nearly 9 of 10 with more than 3 positive nodes having treatment failure. Survival rates closely follow these recurrence rates (Figure 2), with 60 to 75% of node negative patients surviving 10 years compared to only 13% of those with 4 or more positive nodes. Recurrence is nearly invariably associated with eventual death from breast cancer.

FIGURE 2.

**BREAST CANCER SURVIVAL RATE**
**(5 and 10 YEARS)**
**FOLLOWING RADICAL MASTECTOMY[3]**

**% SURVIVING**

| PREMENOPAUSAL | AT 5 YEARS | AT 10 YEARS |
|---|---|---|
| All Patients | 60% | 49% |
| Negative Nodes | 83% | 75% |
| 1-3 Positive Nodes | 67% | 50% |
| More than 4 Pos. Nodes | 24% | 13% |
| **POSTMENOPAUSAL** | | |
| All Patients | 65% | 45% |
| Negative Nodes | 77% | 61% |
| 1-3 Positive Nodes | 61% | 33% |
| More than 4 Pos. Nodes | 37% | 13% |

Although the favorable prognostic significance of negative lymph nodes is clear, it does not necessarily indicate that the tumor has been removed prior to dissemination. Twenty-five percent of node negative patients will have recurrence and die of breast cancer despite having no evidence of lymphatic spread at surgery. Negative nodes may reflect a capacity of the host to deal effectively with tumor cells disseminated early in the course of the disease. Positive lymph nodes could result from adverse changes in host defenses and/or changes in tumor cell properties which enhance the ability of breast cancer cells to establish metastases, not only in local nodes but in distant sites as well. The high failure rate seen with radical mastectomies (even for node negative patients), the frequent demonstration of tumor cells circulating in the blood at time of surgery, animal studies demonstrating that the regional nodes are not as effective a barrier to the spread of tumor cells as was thought and the demonstration of lymphatic-venous communications via the thoracic duct bypassing regional nodes, all serve to undermine the concept that breast cancer is a disease which progresses in an orderly manner from breast to lymph node to distant sites. Viewing breast cancer as a disease which is frequently widespread at time of diagnosis has important implications with regard to our therapeutic approach.

Our aims in the primary care of breast cancer are two fold: first and most important is to achieve cure of the disease and second to accomplish cure while maintaining the best possible cosmesis and quality of life. Surgical studies have addressed both of these goals, attempting to improve cure rates using extended or superradical mastectomies or attempting to achieve cure rates comparable to radical mastectomies with lesser surgical procedure in conjunction with other therapeutic modalities.

The radical mastectomy was challenged as the standard breast cancer operation in the early 1950's by enthusiastic surgeons who extended the conventional procedure to include resection of the internal mammary lymph nodes. Although reported results with these more radical techniques were at times superior to those obtained with radical mastectomy, only recently has data become available which compares the results of extended radical mastectomy to radical mastectomy in a prospective randomized study.[4] It would appear that there may be limited indications for the use of extended radical mastectomy; specifically, for those patients with inner quadrant lesions and positive axillary nodes. Whether comparable results could be obtained by radiotherapy to the internal mammary nodes or by addition of chemotherapy is unknown.

Studies of *less* radical operative procedures have been directed to testing the hypothesis that such procedures will yield similar results to radical mastectomy. A number of prospective "controlled" studies have as yet failed to conclusively define the extent of surgery necessary for breast cancer. Flaws in study design have prevented their providing definitive answers to the questions posed.

It is generally accepted in England (at least as judged by what is published) that the McWhirters approach of simple mastectomy to remove the primary tumor followed by radiotherapy to the pectoral region and regional lymphatics yields results comparable to radical mastectomy. A prospective randomized study to prove this was initiated in Cambridge in 1958 and 10-year results showed similar survival for the simple mastectomy plus radiation therapy group, and for the radical mastectomy plus radiation therapy group.[5] Unfortunately, participating surgeons were allowed to exclude eligible Stage II patients if they were not viewed as candidates for this trial, and this selection factor lessens the strength of the conclusions which can be drawn.

This study and others[6] would indicate that axillary radiation is as effective as dissection for controlling axillary lymph nodes. However, there is other evidence[7] which casts doubt on this tenant.

In this country lumpectomy followed by modern radiation therapy has given excellent results in uncontrolled series of patients.[8] Unfortunately, little information is provided regarding tumor size and mode of selection of patients for study, important considerations when attempting to compare these results with those of surgery.

Though these trails suggest that lesser procedures than radical mastectomy yield equivalent results, definitive answers are not available because of the flaws in each of the trails.[9] Hopefully, the current NSABP protocol will provide an answer to the question of whether axillary dissection is necessary to cure breast cancer. In this study Stage I patients receive simple mastectomy alone, followed by axillary dissection if nodes should become positive or simple mastectomy plus radiation therapy or radical mastectomy. At a median followup time of 36 months, all treatment arms appear comparable for either Stage I or Stage II patients.[9]

Further controlled trials will be needed to elucidate the role of lumpectomies in managing selected patients with small localized tumor and negative axillary nodes. These patients can probably be adequately managed with less deforming procedures than radical mastectomy without jeopardizing their chances for long-term survival, though this is not clearly proven. The long-term risk in irradiating the breast, which appears to be necessary in view of the frequent multifocal nature of breast cancer, is unknown. Japanese women who received more than 10 rads exposure from the atomic bomb have an increases incidence of breast cancer with a latency period of 15-20 years.[10]

It should again be pointed out that local therapy alone is not adequate to cure breast cancer which involves the axillary nodes. Disease beyond the breast is generally not cured by surgery and no combination of surgery and local radiation therapy will change these results. The problem for these patients and for one-quarter of patients with disease apparently confined to the breast remains subclinical occult metastases which are present at the time local therapy is being undertaken.

Endocrine manipulations (oophorectomy) and radiation therapy given post-operatively as an adjuvant to radical mastectomy have had no favorable influence on the ultimate survival of treated patients.[11, 12, 13] Radiation does prevent local and regional recurrences which occur in 10-25% of surgically treated patients. That preventing local recurrences does not contribute to improvement in long-term survival again points out the systemic nature of breast cancer.[14]

Breast cancer is a disease that is responsive to chemotherapy. A variety of agents with differing modes of action are active in this disease. All alkalating agents are active with cyclophosphamide among the most useful. The antibiotic adriamycin is one of the most active single agents producing responses in up to 40% of patients. The anti metabolites 5FU and methotrexate are also highly active agents. Single agent therapy is well tolerated, however the responses seen are generally not profound ones and are also of limited duration. Attention turned during the mid 1960's to the use in combination of drugs having differing toxicities and mechanisms of action. It was soon demonstrated that these combinations produced higher response rates than single agents and that complete remissions were seen in 10 to 20% of treated patients. Direct comparisons of single and combined therapies convincingly demonstrated the superiority of combined regimens.[15, 16, 17]

In summary, aggessive combination chemotherapy is capable of inducing remission in 50 to 80% of patients with metastatic breast cancer. These remissions last 8 to 12 months and result in prolongation of life in the responding patients to between 17 and 22 months. Although these results represent important advances in the management of breast cancer, it is obvious that they don't offer the answer to improving cure rates for this disease. Five percent or less of patients survive longer than 5 years after institution of chemotherapy for metastatic disease, although meaningful palliation of symptoms is available for most patients. Attempts to improve these results utilizing immunotherapy or hormonal therapy in conjunction with chemotherapy have been inconclusive or not beneficial to date.

The major limitations to cure of breast cancer by present-day modalities can be summarized as follows. For surgery and radiation therapy, either alone or in combination, dissemination which has occurred prior to diagnosis via the lymphatic or venous system is the major reason patients fail to be cured. Chemotherapy fails not because of anatomic factors but rather because of excessive body burden of viable cancer cells. Animal tumor studies have demonstrated an invariable relationship between curability with chemotherapy and the total number of cancer cells present. All of the major types of tumor cell resistance to chemotherapy, that is, innate insensitivity to the drugs, the presence of large number of resting, non-cycling cancer cells, or the involvement of "sanctuary" site such as the CNS which cannot be reached by drugs, are associated with advanced disease and large body burdens of cancer cells.

Early studies of adjuvant chemotherapy using drugs in the perioperative period were based upon the demonstration of cancer cells circulating in the blood at time of surgery.[18]

The principal prognostic factor employed in selecting patients has been the presence of positive axillary lymph nodes. Estrogen receptor assays and presence of lymphatic invasion in the primary also independently predict for recurrence, but have not been used to date in patient selection for adjuvant chemotherapy. Fisher used melphalan, a relatively non-toxic alkylating agent given orally over two years in node-positive patients, a therapy course more in keeping with modern concepts of adjuvant chemotherapy though the drug employed has only a 20% response rate. Short-term followup published in 1975 showed 25% fewer recurrences in premenopausal patients but no significant benefit following menopause.[19], [20]

Adjuvant therapy, preferably with a combination drug program, is appropriate for premenopausal patients with positive nodes. For postmenopausal patients careful discussion with each patient is needed. Therapy is best delivered in this situation as part of an ongoing investigative effort to define the usefulness of adjuvant chemotherapy. Cooperation in such programs with prolonged followup of large groups of patients is also the only way in which the risks of therapy can be assessed.

The chemotherapeutic data now available, which support our current appraoch to the real problem of breast cancer, micrometastases, represent an important advance in therapy of this disease. At present, preservation of the breast remains a secondary goal, however, if adjuvant chemotherapy clearly improves survival it may allow less radical surgical procedures to be employed in most patients. Presently, we are dependent upon knowledge of the status of axillary nodes to select high-risk patients and for the foreseeable future sampling of axillary nodes will be necessary, although radical dissection may not be needed.

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Arizona
Medicine

# Arizona's Answer to Califonno & Carter

We desire honest input to the NHI meetings because we feel certain things need to be said. We feel the practicing physicians of this state are in the best position to be consumer advocates in speaking for our patients. We are in the best position to assess their wants and needs and to be able to best direct the expenditure of their funds in the most productive manner.

The most important fact that we want publicized, and to be forever cast in bronze, is that neither the patients nor the physicians in this state will accept anything less than the high quality health care that we now have. There is absolutely no reason to accept anything less! It is a well established fact that our citizens do enjoy quality health care. This has been developed and provided by the existing health care delivery system. Any change to the detriment of this high quality health care must be judiciously avoided and unrelentlessly opposed.

The only plausible excuse for interrupting the status quo is the cost argument. Certainly the proposed cap on hospital revenues would not accomplish its asserted ends. Instead, under the guise of cost control, it would only effectively produce rationing of health care services with subsequent degradation of quality.

Some degree of cost control is available to all of us in a much more rational manner. In fact, the same federal government that is suggesting cost containment legislation for hospitals could do much towards cost control. The federal government itself should be first to do something about inflation, which in itself, is one of the primary causes of increased health care costs. Why hasn't Mr. Carter done anything to keep his campaign promises about inflation? As long as the federal government spends money like it's going out of style, inflation will remain rampant and health care costs will continue to escalate as part of the general economy. If Mr. Carter would only keep his promise to balance the budget meetings such as this would not be necessary. Parenthetically, why is there such preoccupation by the federal government about health care cost when it is only one of many, many segments of the economy?

Some costs attributed to health care have absolutely nothing to do with patient care — such as this and the other 75 hearings or panel discussions such as this scattered throughout the United States. There has to be some cost involved, perhaps small by government spending patterns, in Mr. Califano's exercise which certainly will be called a health care cost; but, which does not provide one iota of help to one ailing patient or even a single aspirin for the poor taxpayer's headache! Recently Mr. McMahon of the American Hospital Association cited the figure of twenty-two dollars per patient admission that is required for proof of satisfaction of governmental regulations. Multiply that twenty-two dollars by the number of hospital admissions and you have a figure of eight hundred and sixty-three million dollars in 1977 that adds not one penny to patient care. I submit this is patently unfair and indicative of the government's lack of credibility in their presentation of problems. Why can't HEW reduce the regulations and save the public these eight hundred sixty-three million dollars?

The reason is quite clear. Regulations promulgate unforeseen problems that the bureaucratic intellect answers with more regulations. Obviously the cycle has to be interrupted somewhere and it is totally the responsibility of the bureaucracy involved to do it! When can we expect this from the Secretary?

Another area of inequity exists in the failure of the federal government to include the many governmental institutions in their multiple regulations. I am referring to the V.A. Hospitals, Armed Service Hospitals, County Hospitals, University Hospitals, and so forth. These hospitals must be considered in such things as hospital planning and certificate of need certification that inundates the private hospitals. As a matter of fact, many of these institutes have the highest overhead and poorest cost effectiveness because they are bureaucratically controlled and operated. Perhaps this is the reason they are exempted from these regulations, but this is not a rational reason. Uncle Sam needs to get his act

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together in this respect.

Another area that Uncle Sam needs to put things back together in is in the area of fee schedules for medical services. On the one hand, the Federal Trade Commission is costing organized medicine and the American taxpayer millions of dollars attacking fee schedules and advocating physician advertisement. On the other hand, certain members of the Federal Congress are pushing for exactly the same fee schedules for medicare and medicaid patients, and many state laws (such as the Industrial Commission of Arizona) mandate fee schedules. This overt schizophrenia on the part of the various components of government is absolutely ridiculous. Again a terrible price tag is involved that does nothing other than line lawyers' pockets with taxpayers' dollar bills!

The mention of lawyers lining their pockets reminds many of us practicing physicians of the malpractice situation which has added tremendously to health care costs. Indeed, this figure placed on top of the figures of inflation add up to about the average increase in physician fees during the past few years. Someone needs to set limits of liability and the only group that can do this is the American public through their elected representatives in Washington, D.C. The various states can solve many of the local problems, but the setting of limits of liability needs to be done on a national level. This has to be done to protect health care delivery in any setting.

Most of the proposals for a comprehensive, mandatory program of national health insurance mandate governmental control justified by the accusation of escalating medical care costs. This is the absolute epitome of lunacy! Where has the government ever done anything better and cheaper than the private sector unless the government has regulated itself unfair competition or outlawed its competitors? We all know the consistent track record of the federal government has been to tax and spend, tax and spend. Everyone realizes the way an ambitious bureaucrat advances in life is to cause more bureaucracy to be built beneath him, which is accomplished only with more expenditure of tax money. These time proven precepts will certainly prevail in the halls of the Department of Health, Education and Welfare; and, what ultimately will be produced is another governmental monster that will cost the taxpayers billions more dollars for a new system strangled by regulations which will be capable only of second class care. After having just returned from London and having seen some of the dismal hospital situations there, which are a direct result of exactly the same national health system; I came away with a strong sense that this must not happen here! The situation in Great Britain after World War II was entirely different than the current situation in the United States, and there is absolutely no sane reason to let history repeat itself! The cost of the British National Health System has been a significant factor in reducing the United Kingdom from a major power to a place of minor significance in the world today. Indeed, this same thing could occur here as some of the National Health Insurance proposals would absolutely ultimately bankrupt the United States.

Rather than producing this supreme disaster of all times, the current administration would be best advised to seek a more prudent NHI proposal, such as catastrophic insurance; and to move forward in the battle to control inflation. This could be the deciding factor between a one or two term administration. Historians of the future may well acclaim Mr. Carter as the two term president who balanced the budget, or condemn him as the individual who engineered the collapse of the greatest system of freedom and liberty in history!

Thank you.

John F. Kahle, M.D.,
President, ArMA

Presented to The National Health Insurance Meetings, Phoenix, 10/27/77

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# The Future — Goals and Priorities

On the occasion of entering the Deanship of Arizona's College of Medicine, reflection on the future seems appropriate. Clearly, the term "emerging status" no longer applies to the College. Yet, it is just as clear that neither "arrived" nor "established" is an appropriate descriptor. To steal a phrase, there is "yet a way to go."

While we address problems of the future, the level of excellence present in the College must be maintained. This alone will be a major challenge. The strength of the educational and service programs lies in retaining faculty of the highest caliber. This will require maintenance or achievement of competitive salaries, adequate space and resources for teaching and research, and an atmosphere of stability and enrichment.

State and national resources are limited. Priorities are continually changing. Arizona has a uniqueness which must be kept in mind when needs are analyzed. And yet, because the College cannot be all things to all people, a listening attitude and a receptive, open mind must be maintained as College priorities are set and reset and resources sought. The Dean must be an implementor toward supplying solutions to health problems—problems seen from the vantage point of practicing physicians, faculty, and the student. In considering all of these views, however, the Dean must be responsive to the needs of the people of Arizona.

Perhaps the major problem for Arizona is the provision of health care to the underserved areas, especially the rural sites. The College cannot solve this problem alone, but can help by receiving and supporting rural applicants into the College, by including rural experiences during undergraduate and housestaff education, and by providing ready access to consultation and continuing education to the established, practicing physician. Through these supportive roles, the College can and must become involved in meeting this critical need.

A number of areas in the medical curriculum are moving into positions of high priority. Three receiving recent attention are geriatric medicine, nutrition, and cost containment. Analysis of the present teaching of these topics (followed by changes in emphasis, recruitment of faculty resources, and new course offerings) will be needed to provide the background for the graduate of tomorrow's class.

Should the output of graduates from the College remain at present levels? The current applicant needs and manpower requirements for Arizona should be analyzed. Should growth be the choice, then some new and appropriate directions should be determined. A closer relation to the valuable resources of physicians and facilities in Phoenix will need to be developed and added to those already a part of the Tucson-based education programs.

In return for the superb support the College has received from the people of Arizona, it is appropriate that much be returned in kind. The expertise in the College should be readily available when requested. New knowledge accruing from research in the basic and clinical sciences must be widely disseminated. National resources brought to Arizona through the College should be widely shared to provide the "seeds" for solution of our local health care needs.

Solving these problems in ways compatible with Arizona's diverse, yet unique needs, is the major challenge of the Deanship. For the College, we look forward to addressing these problems.

Louis J. Kettel, M.D., Dean

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## AUXILIARY HIGHLIGHTS

Community Health continues to hold top priority in the Auxiliary effort to support physicians and what they represent in our country. That effort is divided between the community at large and family health. Current programs involve the following diversified areas of concern:

**Community Health**
GEMS (Good Emergency Mother
  Substitutes)
Rehabilitation
Immunization
Emergency Medical Services and
  Identification
Blood Donor
Detection
Environment
Breast Self Examination
Venereal Disease

**Family Health**
Safety
Family Relations
Physical Fitness
Use and Misuse of Drugs
Nutrition

Program materials and implements are available for large groups or small and can be aimed at selected audiences or be community-wide projects. Each Auxiliary tailors its own participation to coordinate with local need.

Emphasis is being directed toward teaching as many people as possible to use the Heimlich Maneuver life saving technique to aid the choking victim, and Emergency Cardio-Pulmonary Resuscitation is of particular concern to Auxiliary members due to the high incidence of coronary problems among doctors themselves.

Special interest activity is subject to generation at any time new ideas or requests may be received from the medical profession, as Auxiliaries attempt to reflect the professional position.

Mrs. Melvin W. (Jean) Phillips
Auxiliary Editor

# Correspondence

**Louis J. Kettel, M.D., dean of the College of Medicine at the University of Arizona, accepts a $16,000 check for medical student scholarships from Arizona Medical Association Auxiliary members Mrs. William Bishop of Globe (left) and Mrs. James Parsons of Tucson. Mrs. Bishop is chairperson of the Auxiliary's Hamer Educational Loan Fund Committee. Mrs. Parsons is Auxiliary president-elect.**

Mrs. William E. Bishop, Chairman
Hamer Educational Loan Fund
211 South Third Street
Globe, Arizona 85501

Dear Mrs. Bishop,

Thank you very much for the award of $16,000.00 in the form of a grant to the medical students of the College of Medicine. We will be using these monies as interest-free loans as needed. The loan fund will be known as the Arizona Medical Association Auxiliary Loan Fund.

You should know that this money is extremely valuable to the College of Medicine. Scholarship, grant and loan monies are becoming more and more difficult to obtain. Additionally, those monies which are being developed, particularly through federal sources, have more and more strings attached to them. This even includes the potential of income tax, since the scholarships are being treated as income to the students. Students are additionally being required to pay interest on the money from the initiation of the loan. Furthermore, banks are becoming reluctant to give loan money even though it is federally insured. This is due in part to the high default rate for many students, although this is not true of medical students. The result is increased difficulty in convincing local banks to issue student loans, even when federal insurance on these loans is available.

In view of the points above, grants such as yours play a very important role in assuring that students in acute financial need can remain in school. As you are aware, the investment in medical education is great. To lose a student over a matter of a few dollars of loan money, when the cost to society of medical education is somewhere between $20,000 and $50,000 per student per year, is a tragedy. We appreciate greatly, your interest in helping us in this very substantial matter. With warm personal regards and deep gratitude.

Sincerely yours,
Louis J. Kettel, M.D.
Dean

## ERRATA

Arizona Medicine wishes to express its apologies and regrets for the inclusion of the editorial comments in bold print under the names of Dr. Findlay E. Russell and Dr. Albert L. Picchioni, in their paper "Snake Venom Poisoning in Arizona, "Arizona Medicine 34: 457-462, 1977. These comments were not written by the authors, are not ascribed to by Dr. Russell or Dr. Picchioni, nor were the authors made aware of them in the page proofs or at any other time prior to publication. We apologize for the oversight and any embarrassment these remarks have caused the authors.

## ARIZONA MEDICAL HISTORY PROJECT

### Progress Note

This project is now underway. The Robert S. Flinn, M.D. Foundation has provided funds, and the Project Director, G. Wesley Johnson, PhD has gathered a staff and begun collecting data. A local (Phoenix) advisory board has been appointed and soon a state-wide consulting board will be selected.

Anyone who has documents, photographs, correspondence, hospital historical data, anything pertaining to the development of Arizona medical service, all are urged to contact M. Burbach, Project Administrator at 257-0017. Your assistance is sought and appreciated.

# In Memoriam

## *KENNETH A. HERBST, M.D.*
*(1906-1977)*

Born in Hastings, Minnesota, Dr. Herbst received his M.D. in 1929 from the University of Minnesota Medical School and interned the following year at the Indianapolis General Hospital.

In January, 1931 he arrived by way of the Coronado Trail, on January the second, 1931 in St. Johns, Arizona, a four hundred citizen community, to do a locum tenens for Dr. Bouldin. Bouldin, was State Senator elect. Herbst was briefed, over breakfast, on the nature of the practice and Dr. Bouldin departed immediately for Phoenix and his Senatorial duties.

About three months later, he had completed his locum tenens and was back in Minnesota but soon was to accept an appointment as Chief Surgeon to the Southwest Lumber Company in McNary. (1934) He later removed his practice to Phoenix in 1948.

Ken recalled that the medical facilities in McNary at that time were rather primitive, a four bed hospital, no X-Ray or laboratory facilities and no nurse. Surgical cases were usually sent to Albuquerque, New Mexico since that seemed to be the best land road out of the White Mountains at the time. House calls were made by horseback or afoot, and sometimes by car over a wide area. This was general practice at its most exciting and stimulating setting. The "on the job training" was long hours and continuous on-call. During his tenure there as Chief Surgeon, the medical facilities were upgraded and nursing assistants were acquired and later an assistant medical practitioner.

In 1948, Dr. Herbst came to the Valley and was associated in general practice with Dr. Chris Risser until 1961. He was a founding member of the Arizona Academy of General Practice and a past Secretary. He also served as a director of the Southwest Blood Services.

There followed a long travail of physical disability with dolorous loss of ambulation and restricted activity. His serenity was unchallengeable. This modest physician possessed all the precious traits that mark the man who would successfully practice the Art of Medicine.

J. W. Kennedy, M.D.

# *ArMA Reports*

## PHYSICIAN REHABILITATION COMMITTEE

The meeting of the Physician Rehabilitation Committee of the Arizona Medical Association, Inc. held at 810 W. Bethany Home Road, Phoenix, Arizona on Saturday, September 17, 1977, convened at 12:10 p.m., Thomas E. Bittker, M.D., Chairman, presiding.

### DEFINITIONS: IMPAIRED - DISTRESSED

Considerable discussion ensued over the definitions of the "Impaired Physician" and "Distressed Physician."

The purpose of defining the impaired and distressed physician is to facilitate referral to the Physician Rehabilitation Committee. It should be noted that each case will be judged on its own merits and that the ultimate goal of this committee is for identification and rehabilitation. The ideal situation is early identification of a problem and intervention with appropriate resources prior to the onset of any impairment.

IT WAS MOVED AND CARRIED TO ADOPT THE DEFINITIONS AS FOLLOWS:

An *impaired physician* is a physician who is considered by his *colleagues* as unable to practice medicine with reasonable skill and safety to patients by reason of illness, abuse of alcohol, excessive use of drugs, narcotics, chemicals, or as a result of any mental or physical condition, professional incompetence, or senility.

The *distressed physician* is one whose level of practice continues to conform to the standards endorsed within the medical professional community, but who shows signs of stress as a result of an emotional disorder, substance abuse, or as a result of medical illness. These signs of stress will vary between individuals and manifest themselves as changes in behavior as witnessed by loved ones, colleagues, and patients.

### FLOW CHART

Following extensive discussion of several changes, the following flow chart was adopted as a guide for handling cases referred to the committee.

Mr. Robinson was asked to incorporate the various changes and provide copies to the committee at the time the minutes are distributed. (*available at ArMA office*)

### CONTACT PHYSICIAN(S) TEAMS

Dr. Louis E. Young reviewed his letter of July 15 for the benefit of the committee.

It was determined that we should provide a role playing educational session in confrontation during our next meeting.

### LIAISON

Discussion ensued on the ongoing liais with BOMEX and it was determined continue the present liaison and not to invi a member of BOMEX to be a member of tl committee at this time.

Dr. Butler indicated that he has ma contact with various medical staffs and w be speaking to these groups in the ne future regarding the activities of the com mittee. Dr. Clymer reported that he h discussed this committee's activities wit the Board of Directors of the Pima Count Medical Society.

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## EXECUTIVE COMMITTEE

The meeting of the Executive Committe of the Arizona Medical Association, Inc held at 810 West Bethany Home Roa Phoenix, Arizona, on Friday, September 2 1977, convened at 6:41 p.m., John F. Kahl M.D., President and Chairman, presiding.

### DEPARTMENT OF HEALTH SERVICES

Dr. Dandoy reviewed current activitie regarding the implementation of S.B. 137 which, among other things, provides fo Medically-Underserved Health Servic Areas. She indicated that several committee were at work, one on the problem of are designation, and one on the function of th Coordinating Medical Provider. Anothe active area is the development of regulation relating to midwifery.

Dr. Dandoy also indicated that there i renewed activity and interest in improvin the health facilities at the Arizona Stat Prison.

She also reported on a recent meeting o Sonora, Mexico physicians in which ther was expressed great interest in a liaiso between the Sonora physicians and ArMA She indicated that we could expect to hea from them in the near future.

### CENTRAL ARIZONA HEALTH SYSTEMS AGENCY

The letter from the subject agency seeking volunteers was reviewed. It was determined that this request more properly belongs with the Gila, Maricopa, and Pinal County Medical Societies.

### UNDERWRITING REVIEW COMMITTEE COMPENSATION

Mr. Robinson reported that a request had been received for consideration of compensating those traveling to the subject committee meetings for their travel time in addition to being compensated for the time actually spent at the meeting.

IT WAS MOVED AND CARRIED TO NOT APPROVE THE REQUEST FOR FINANCIAL REASONS.

Mr. Robinson was asked to review the current policy of paying $.15 per mile to see if there is a more realistic and current figure. He is to report back at the next meeting.

### NATIONAL HEALTH INSURANCE

Dr. Reed's letter of September 9, 1977 to the AMA regarding ArMA's attitudes toward National Health Insurance was received for information.

### BOARD OF DIRECTORS AGENDA

The agenda for the meeting of the Board of Directors was reviewed. Extensive discussion ensued on the status of the Arizona health Service Corps. No actions taken.

### SEARCH COMMITTEE

IT WAS MOVED AND CARRIED TO RECOMMEND THAT THE FOLLOWING SERVE ON A SEARCH COMMITTEE TO LOCATE A NEW EXECUTIVE DIRECTOR FOR THE ARIZONA PERINATAL PROGRAM:

WILLIAM C. SCOTT, M.D.,
CHAIRMAN
C. DONALD CHRISTIAN, M.D.
WILLIAM J.R. DAILY, M.D.
RAYMOND J. JENNETT, M.D.
MR. TED WARNER

### MEMBERSHIP SOLICITATION

IT WAS MOVED AND CARRIED TO APPROVE PROCEEDING WITH THE PROPOSED MEMBERSHIP SOLICITATION PROGRAM AS OUTLINED BY MR. ROBINSON, INCLUDING AUTHORIZATION FOR THE LASHER-COWIE AGENCY TO DEVELOP NEW MEMBERSHIP BENEFIT PROGRAMS.

### PRESIDENT-ELECT OF AMA

IT WAS MOVED AND CARRIED TO PROVIDE FULL SUPPORT TO DANIEL T. CLOUD, M.D., SHOULD HE DETERMINE TO SEEK THE OFFICE OF PRESIDENT-ELECT OF THE AMA.

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### MATERNAL AND CHILD HEALTH CARE COMMITTEE

The meeting of the Maternal and Child Health Care Committee of the Arizona Medical Association, Inc., held on Saturday, October 1, 1977 at 810 West Bethany Home Road, Phoenix, Arizona, convened at 1:52 p.m., William C. Scott, M.D., Chairman, presiding.

### PROPOSED RULES FOR LICENSING OF MIDWIFERY

The subject proposed rules prepared by the Division of Family Health Services, Arizona Department of Health Services were presented by Drs. Ehling, Baum, and Applegate of the Department of Health Services.

The committee then reviewed each line of the seven-page document making numerous suggestions for change and strengthening of the proposed rules.

Concern was expressed that the law providing for lay midwives should be repealed, but until that can be accomplished, these rules should help protect the mothers and their babies.

### ARIZONA PERINATAL PROGRAM

Mr. Ted Warner reviewed several alternatives for future funding of the program after the five-year grant expires:

1. Funding by the Department of Health Services
2. Creation of a public corporation funded by tax funds
3. Creation of an "Independent Observer" mechanism which would entail spinning off the various components of the program while maintaining only an observer role
4. Creation of a free-standing charitable corporation which would seek funds from the public for support

Dr. Meyer reported on the document he is preparing to assist in development of some mechanism to continue the program after the original Robert Wood Johnson Foundation grant expires. Said document would come back to the committee for review at a later date.

### AD HOC COMMITTEE ON THE U.S. SUPREME COURT DEICSION REGARDING ADVERTISING

The meeting of the Ad Hoc Committee on the U.S. Supreme Court Decision Regarding Advertising held at 810 West Bethany Home Road, Phoenix, Arizona on Saturday, October 8, 1977, convened at 9:09 a.m., Richard L. Dexter, M.D., Chairman, presiding.

### REVIEW

Edward Jacobson, legal counsel, reviewed in great detail the U.S. Supreme Court decision regarding *Bates, et al. vs. State Bar of Arizona.* The rules proposed by the New York State Board of Regents and the Arizona State Bar Association's interim report on this matter were also discussed.

Extensive discussion ensued on just how we should proceed culminating in the following action.

IT WAS MOVED AND CARRIED TO ASK MR. JACOBSON TO DRAFT LEGISLATION THAT WOULD CORRECT THE EXISTING VOID IN ARIZONA STATUTES CREATED BY THE U.S. SUPREME COURT'S DECISION.

It was agreed that Mr. Jacobson would seek input from legal counsel of the Maricopa and Pima County Medical Societies.

After the proposed legislation is drafted and reviewed, the committee would meet again. It was also suggested that when the draft is ready, we would seek input from all other county societies, this would also be truw of any forthcoming regulations which would emanate from BOMEX.

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### AD HOC COMMITTEE ON HEALTH CARE COST

Meeting of the Ad Hoc Committee on Health Care Cost of the Arizona Medical Association, Inc., held Thursday, September 29, 1977 at 810 West Bethany Home Road, Phoenix, convened at 6:48 p.m., Robert E. Hastings, Jr., M.D., Chairman, presiding.

### ArHA'S AD HOC COMMITTEE ON H.R. 6575 ALTERNATIVES

The Arizona Hospital Association forwarded their interim report on cost containment alternatives as adopted by their Board of Directors on September 16, 1977 for the Committee's review and reaction. It is noted that the Committee's reaction to ArHA's interim report was generally enthusiastic, and is attached to these minutes for information.

### CERTIFICATE OF NEED

It was reported that during the Arizona Hospital Association's Board of Directors meeting held September 16, 1977, a verbal request was made for the Association to consider the existing certificate of need laws be expanded to cover clinical capital equipment expenditures in excess of a given amount ($100,000), by all providers. Concern was expressed that the Association not change its position as it pertains to the statutory exemption from the certificate of need laws for private physician offices. CONSIDERABLE DISCUSSION ENSUED WITH THE COMMITTEE TAKING "NO POSITION" ON THE SUBJECT OF EXPANDING CERTIFICATE OF NEED LAWS TO COVER PHYSICIAN OFFICES.

### JOINT MEETING WITH ArHA COMMITTEE

The Arizona Hospital Association requested that the Committee consider scheduling a joint meeting of the ArHA Ad Hoc Committee on Cost Containment and the ArMA Ad Hoc Committee on Health Care Cost. It was reported that the next meeting of the ArHA Committee would be held on Friday, October 14th in Tucson, and that perhaps arrangements could be made for at least the Tucson delegation of this Committee to meet with them. IT WAS DETERMINED THAT STAFF WOULD TRY TO WORK ON APPROPRIATE TIME FOR THE TWO COMMITTEES TO MEET.

### REPORT OF COMMITTEE MEMBER ASSIGNMENTS

**Catastrophic Insurance Program**
**—Laurence Linkner, M.D.**

Dr. Linkner filed the following report as prepared by the Actuary for Arizona Blue Cross/Blue Shield concerning pure premium rates for proposed State program:

> For discussion purposes only, following are pure premium rates for a $5,000 deductible health program that pays 100% after the deductible.

| | Adult | Child |
|---|---|---|
| All Arizona Residents | $ 52.00 | $ 8.50 |
| Working Poor and Indigent | $ 91.00 | $15.00 |
| Indigent | $104.00 | $17.00 |

RECEIVED FOR INFORMATION.

**Physician Education**
**—W. Scott Chisholm, M.D.**

Dr. Chisholm reported that not all information requested from the AMA and other states had been received concerning methods of educating physicians on the cost of health care. It was recommended, however, that a positive approach to have physicians educated on the cost of hospitalization of their patients would be of extreme value.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE BOARD OF DIRECTORS THAT THE ASSOCIATION REQUEST THE HOSPITALS TO PROVIDE A SUMMARY OF CHARGES ON EACH PATIENT UPON DISCHARGE AND AFFIX IT TO THE HOSPITAL CHART FOR REVIEW BY THE ATTENDING PHYSICIAN. FURTHER, THAT THE BOARD OF DIRECTORS CONSIDER INTRODUCING A RESOLUTION TO THE HOUSE OF DELEGATES IN SUPPORT OF THIS MATTER DURING THE NEXT ANNUAL MEETING.

**Health Insurance Industry Incentives**
**—Richard W. Switzer, M.D.**

Dr. Switzer provided the following for the Committee's consideration:

1. A reasonable deductible on all health insurance policies for total health care cost. (Total health care cost includes well care, preventive care, etc.).
2. All health insurance policies should have a co-payment after the reasonable deductible for total health care cost. (Example: 20% of the first $2,000, 10% of the next $5,000).
3. Review of Disability Insurance Programs, including Industrial Commission of Arizona, and its relation to the cost of Health Care.
4. Review of incentive programs for not

utilizing insurance, i.e. Mutual of Omaha, White Cross, Christian Heritage.

5. Review a mechanism for measuring physician performance and develop a system for providing an incentive to those practicing above the norm. Concern was expressed that a great deal of thought must go into such a program to maintain the quality of care.

6. Ability to negotiate a uniform fee schedule for all physicians for all patients in the state.

Although no specific actions were taken there was general agreement on suggestions provided by Dr. Switzer.

**Public Relations and Consumer Education**
**—Ronald Christ, M.D.**

Dr. Christ informed the Committee that a Health Education Program should begin in the elementary school system. The ArMA Professional Committee should develop a proper curriculum of health education for the various grade levels. The Association should seek support and aid from the Department of Education and the Department of Health Services in this regard.

It was suggested that the ArMA Public Relations Committee develop a Task Force to educate citizens on health care. Perhaps utilizing the Auxiliary in this endeavor with Town Hall meetings on Health Care and Health Care Cost would be beneficial in smaller communities. A system of promoting health care should be developed by utilizing higher taxes on health endangering products, i.e. tobacco and alcohol. The proposed Task Force should also review a method of educating the citizens on how not to use the high cost hospital emergency room.

**Quality of Care**
**—John E. Oakley, M.D.**

Dr. Oakley expressed concern that all suggestions of cost control on containment developed by this Committee have as the bottom line—Quality. The concensus of the Committee was that no proposal would be generated that would reduce the quality of care in any manner, rather should enhance the quality of health care. The citizens must be informed of the cost of quality health care.

**Impact on Cost of Regulations by Government**
**—T. Abner Huff**

Mr. Huff provided a release from the AHA which informed that the cost of eight federal regulations add a minimum of $22.00 to each hospitalization this year. Mr. Huff also provided an AHA Developed Paper on Financial Indices to the Committee. It was requested that the physician component of the Health Care Cost be obtained from the AMA. Mr. Huff advised that he will attempt to provide the Committee with the total impact of all regulations imposed by all Governments.

### OTHER BUSINESS

Mr. Huff advised the Committee that a group, Major Employers, have created a Committee discussing the cost of Health Care. This group includes Air Research, Motorola, Greyhound, Southwest Forest Inc., Honeywell, Arizona Health Plan, Central Arizona Laba Council, Blue Cross and Connectic General. Most of this committee have met with the Arizona Hospital Association committee. It was enlightening that they seem to believe that the physicians control the Health Care Cost, that they may resist reduction of employees' benefits. It may be of value to meet with this group in the future.

## AM *Future Medical Meetings*

### CONTINUING MEDICAL EDUCATION

THE FOLLOWING INSTITUTIONS AND ORGANIZATIONS HAVE RECEIVED ACCREDITATION FOR CONTINUING MEDICAL EDUCATION FROM THE COUNCIL ON MEDICAL EDUCATION OF THE AMA

ARIZONA STATE HOSPITAL PHOENIX
DESERT SAMARITAN HOSPITAL MESA
GOOD SAMARITAN HOSPITAL PHOENIX
HEALTH MAINTENANCE ASSOCIATES
PHOENIX INDIAN MEDICAL CENTER
MARICOPA COUNTY GENERAL HOSPITAL PHOENIX
MEMORIAL HOSPITAL PHOENIX
ST LUKE S HOSPITAL AND MEDICAL CENTER PHOENIX
ST JOSEPH S HOSPITAL AND MEDICAL CENTER PHOENIX
TUCSON HOSPITALS MEDICAL EDUCATION PROGRAM TUCSON
U OF A HEALTH SCIENCES CENTER
VETERANS ADMINISTRATION CENTER PRESCOTT
VETERANS ADMINISTRATION HOSPITAL PHOENIX

The accredited institutions and organizations above produce a variety of continuing medical education programs Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category I credit Physicians who participate in programs which are designated Category I by accredited institutions will receive Category I credit toward the ArMA Certificate in CME and the AMA's Physicians Recognition Award

## JANUARY

### COMBINED GRAND ROUNDS

January 4, Good Samaritan Hospital. Sponsor: Family Practice Residency Programs of St. Joseph's, Good Samaritan, and Scottsdale Memorial Hospitals. Contact: Ann Larsen, R.N., Program Coordinator, Family Practice Residency Program, St. Joseph's Hospital and Medical Center, Phoenix, AZ 85013. Approved for required hours toward the AMA Certificate in Continuing Medical Education.

### RUIDOSO MEDICAL SYMPOSIUM "DERMATOLOGICAL PROBLEMS OF THE FAMILY PHYSICIANS".

Inn of the Mountain Gods, Mescalero, N.M. Sponsor: New Mexico Academy of Family Physicians. Contact: Albuquerque Academy of Family Physicians, 2650 Yale, S.E., Albuquerque, N.M. 87106. Approved for 4 required hours toward the ArMA Certificate in Continuing Medical Education.

### PATHOGENESIS OF PULMONARY EDEMA

January 9, 1978, 8 p.m., Del Webb's TowneHouse, Phoenix, AZ. Sponsor: Arizona Thoracic Society (Arizona Lung Assoc.). Contact: Robert W. Khook, Arizona Thoracic Society, 1239 E. McDowell Rd., Phoenix AZ 85006. Approved for 7 required hours toward the ArMA Certificate in Continuing Medical Education.

### BREAST CANCER UPDATE: SCREENING AND MANAGEMENT.

January 14, 1978. Doubletree Inn, Tucson AZ. Sponsor: Office of CME, U of A Health Sciences Center. Contact: Anthony F. Vuturo, M.D., Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 5 required hours toward the ArMA Certificate in Continuing Medical Education.

### PEDIATRIC UPDATE 1978

January 16-19, Doubletree Inn, Scottsdale, AZ Sponsor Dept. of Pediatrics of St. Joseph's Hospital and Medical Center, Phoenix, AZ Contact. Melvin L. Cohen, M.D., Dept of Pediatric Education, St. Joseph's Hospital and Medical Center, 350 W Thomas Road, Phoenix, AZ 85013. Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education an A.A.F.P. credits.

### FIFTH ANNUAL BARROW NEUROLOGICAL INSTITUTE SYMPOSIUM,

January 19-21, 1978. Camelback Inn, Phoenix, Az. Sponsor: Barrow Neurological Institute of St. Joseph's Hospital & Medical Center. Contact: Richard A. Thompson, M.D., Barrow Neurological Institute, 350 W. Thomas Rd., Phoenix, AZ 85013.

### 4th ANNUAL SPORTS MEDICINE SYMPOSIUM

January 21, 1978, 8 a.m. to 5 p.m. Safari Hotel, Scottsdale, AZ 85252. Sponsor: Arizona Medical Association, Inc. Contact: Paul Steingard, D.O. or William Brainard, M.D., Arizona Medical Assoc., Inc., 810 W. Bethany Home Rd., Phoenix, AZ 85013. Approved for 8 required hours toward the ArMA Certificate in Continuing Medical Education.

### 21ST ANNUAL CARDIAC SYMPOSIUM

January 20-21, 1978. Mountain Shadows Resort, Scottsdale, AZ. Sponsor: American Heart Association, Arizona Affiliate. Contact: Gordon Ewy. M.D., 1445 East Thomas Rd. Phoenix, AZ 85014. Approved for 10 required hours toward the ArMA Certificate in Continuing Medical Education.

### SIXTH ANNUAL ARIZONA SURGICAL SYMPOSIUM

January 23-27, 1978. Scottsdale Center for the Arts, Scottsdale, AZ. Sponsor: Phoenix Surgical Society. Contact: Jean P. Angelchik, M.D., 1728 W. Glendale Ave., Phoenix, AZ 85021. Approved for 31 required hours toward the ArMA Certificate in Continuing Medical Education.

### SOUTH AMERICAN MEDICAL SEMINAR

January 29 to February 7, 1978. Lima, Peru & Quito, Equador. Sponsor: International Seminars. Contact: Wei-Ping Loh, M.D., Ph.D., 120 S. Central Ave., St. Louis, Missouri 63105. Approved for hour ective hours toward the ArMA Certificate Continuing Medical Education.

## FEBRUARY

**AFP ANNUAL MEETING 1978**
ebruary 1-4, 1978. Doubletree Inn, cottsdale, AZ. Sponsor: Arizona Aca- emy of Family Physicians. Contact: Mrs. une Boykin, 1027½ E. Camelback Rd., hoenix, AZ 85014. Approved for required ours toward the ArMA Certificate In ontinuing Medical Education.

**YNECOLOGIC ONCOLOGY AND SLIDE EMINAR**
ebruary 4-5, 1978. Marriott Hotel, Tuc- on, AZ. Sponsor: Arizona Society of athologists. Contact: Executive Secre- ary, Arizona Society of Pathologists, 810 V. Bethany Home Rd., Phoenix, AZ 5013. Approved for 7 required hours oward the ArMA Certificate in Continuing ledical Education.

**SOUTHWESTERN SEMINAR ON NEUROMUSCULAR DISORDERS IN CHILDREN**
February 17-18, 1978. Health Sciences Center, Main Auditorium, Tucson, AZ. Sponsor: U of A Health Sciences Center Dept. of Neurology. Contact: Lawrence Z. Stern, M.D., Dept. of Neurology, U of A Health Sciences Center, Tucson, AS 85724. Approved for 9 required hours toward the ArMA Certificate in Continuing Medical Education.

**ARIZONA SOCIETY OF ANESTHESIOLOGISTS ANNUAL MEETING**
February 25 & 26, 1978. Scottsdale Hilton Hotel, Scottsdale, AZ. Sponsor: Arizona Society of Anesthesiologists. Contact: Casey D. Blitt, M.D., Dept. of Anesthesiology, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 9 required hours toward the ArMA Certificate in Continuing Medical Education.

## MARCH

**VALLEY OF THE SUN DERMATOLOGIC SYMPOSIUM**
March 2-5, 1978. Casa Blanca Inn, Scottsdale, AZ. Sponsor: Phoenix Dermatological Society, & University of Arizona. Contact: Dr. Fillmore K. Bagatela, Dr. Peter J. Lynch, 333 E. Virginia, Phoenix, AZ. Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

DAY OF HEMATOLOGY
March 3. 1978. Camelback Inn. Scottsdale. AZ Sponsor St Joseph's Hospital and Medical Center, Phoenix. AZ. Contact Ethelann Murray. M D , St Joseph's Hospital and Medical Center. 350 West Thomas Road Phoenix. AZ 85013 Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education

THE SECOND NATIONAL CONFERENCE ON OTITIS MEDIA
March 3-5 1978 Doubletree Inn. Scottsdale. AZ Sponsor Univ of Arizona College of Medicine and the Indian Health Service Contact Office of Continuing Medical Education and Outreach University of Arizona College of Medicine Tucson. AZ 85724 Approved for 17.5 required hours toward the ArMA Certificate in Continuing Medical Education

**NEW MEXICO METABOLISM SYMPOSIUM**
March 9, 10 & 11, 1978. Taos, New Mexico. Sponsor: Taos, New Mexico. Sponsor: Taos Metabolism Symposium. Contact: Office of Education, Lovelace-Bataan Medical Center, Albuquerque, New Mexico.

**PURGATORY COLORADO MEDICAL SKI SYMPOSIUM. "GERIATRICS: Diagnosis and Treatment".**
March 10-11, 1978. Durango, Co. Sponsor: New Mexico Academy of Family Physicians. Contact: Albuquerque Academy of Family Physicians, 2650 Yale, S.E., Albuquerque, N.M. 87106. Approved for 4 required hours toward the ArMA Certificate in Continuing Medical Education

**2ND ANNUAL SEMINAR, CURRENT CONCEPTS OF HYPERTENSION.**
March 11-12, 1978. Scottsdale Registry Resort, Scottsdale, AZ. Sponsor: Health Maintenance Associates. Contact: Dr. L. A. Oslen, Health Maintenance Associates, 4747 N. 22nd St., Phoenix, AZ 85016. Approved for 10 required hours toward the ArMA Certificate in Continuing Medical Education.

**CURRENT CONCEPTS IN CEREBROVASCULAR DISEASE.**
March 11-18, 1978. Sun Valley Inn, Sun Valley, Idaho. Contact: Margo Walter, Administrative Assistant, Office of Continuing Medical Education and Outreach, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 22.5 required hours toward the ArMA Certificate in Continuing Medical Education.

**GASTROENTEROLOGY FOR CLINICIANS — 1978**
March 13-15, 1978. Del Webb's TowneHouse, Phoenix, AZ. Sponsor: American College of Gastroenterology & the Institute of Gastroenterology, Good Samaritan Hospital. Contact: David C. H. Sun, M.D., Good Samaritan Hospital, Phoenix, AZ 85036. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

**CLINICAL RECOGNITION AND MANAGEMENT OF HEART DISEASE 1978**
March 23-25, 1978. Auditorium, AHSC, Tucson, AZ. Sponsor: Dept of Cardiology, and Internal Medicine, U of A Health Sciences Center. Contact: Frank I. Marcus, M.D., 1501 N. Campbell, Tucson, AZ. Approved for 20 required hours toward the ArMA Certificate in Continuing Medical Education.

## APRIL

**ISSUES IN CRITICAL CARE MEDICINE**
April 8, 1977. Arizona State University. Sponsor: Desert Samaritan Hospital, Contact: L. A. Rosati, M.D., Dept. of Path., Desert Samaritan Hospital. Approved for 7 required hours toward the ArMA Certificate in Continuing Medical Education.

**GERIATRIC POW-WOW**
April 7, 8, 9, 1978. Arizona Inn, Tucson, AZ. Sponsor: Continuing Medical Education, U of A. Contact: A. Vuturo, M.D. Office of Continuing Medical Education and Outreach, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education.

**PEDIATRIC RADIOLOGY FOR THE GENERAL RADIOLOGIST**
April 14-16, 1978, Doubletree Inn at Scottsdale Mall, Scottsdale, AZ. Sponsor: Maricopa County General Hospital. Contact: A.R. Sandrock, M.D., Chairman, Dept. of Radiology, Maricopa County General Hospital, 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 15 required hours toward the ArMA Certificate in Continuing Medical Education.

**ARIZONA MEDICAL ASSOCIATION 86th ANNUAL CONVENTION.**
April 25-29, 1978, Tucson Community Center and Marriott Hotel, Tucson, AZ. Sponsor: Arizona Medical Association, Inc. Contact: Mr. Bruce E. Robinson, 810 W. Bethany Home Rd. Phoenix, AZ 85013. Approved for required hours toward the ArMA Certificate in Continuing Medical Education. Detailed program will appear in the March issue of *Arizona Medicine.*

## MAY

**UPDATE: PRIMARY CARE 1978**
May 3-6, 1978. Arizona Health Sciences Center Sponsor: U of A Continuing Medical Education. Contact: A. Vuturo, M.D., Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 25 required hours toward the ArMA Certificate in Continuing Medical Education.

## JUNE

**MEDICAL HORIZONS: ADVANCES IN THERAPEUTICS**
June 30-July 2, 1978. Little America Hotel, Flagstaff, AZ. Sponsor: Office of Continuing Medical Education, U of A Health Sciences Center, Tucson, AZ. Contact: Anthony F. Vuturo, M.D., AHSC, Tucson, AZ 85724. Approved for 10 required hours toward the ArMA Certifi-

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**THERAPY: PRINCIPLES AND USE OF DRUGS**

**AT STANFORD UNIVERSITY
JANUARY 23-27, 1978**

The objective of this five-day course is to familiarize physicians, and others involved in clinical pharmacology, with the concepts of modern drug use. The program includes an in-depth review of the basic principles and the practical aspects of drug action. The course is intended to assist physicians in their daily clinical work. Tuition fee is $265 payable upon enrollment, and advance registration is required.

Morning lectures will review important principles of chemistry and biochemistry and will deal with molecular mechanisms of drug actions; routes of administration; drug distribution, elimination, and time course of drug action; cyclic AMP and drugs; toxicity, tolerance and physical dependence; teratogenesis; mechanisms of antibiotic resistance; drug interactions; the F.D.A. and drug development in the United States. Afternoon informal seminars will deal with topics pertinent to pharmacology and review in detail new developments in rapidly changing fields.

**BASIC SCIENCE FOR CLINICIANS**

**AT STANFORD UNIVERSITY
FEBRUARY 27-MARCH 3, 1978**

This five-day multidisciplinary course is a concise but comprehensive review of basic medical science designed to meet the needs of those clinicians who wish to expand their knowledge of molecular biology. Early registration is advised as attendance is limited. Tuition fee of $265 is payable upon application for enrollment.

General lectures will cover a review of chemistry and physics for clinicians, chemical bonds of biological importance, subatomic particles, correlation of cell structure and function, the structure and function of proteins, sugars and lipids, the structure of nucleic acids, DNA synthesis, expression and organization of genetic information, regulation of gene expression, gene manipulation, carbohydrate and fat metabolism, bioenergetics, molecular aspects of visual excitation, the organization and function of the brain, exploration of Mars.

Elective sessions will include the evolution of proteins, the discovery of particles with charm, bacterial antibiotic resistance, salt and water, dysoxia, association between HL-A and various disease states, nutrition, prostaglandins, atherosclerosis, mechanisms of immunity, genetics: problems and opportunities, clinical aspects of nutrition, human evolution.

A faculty of 19 Stanford University biomedical scientists, including four Nobel Laureates, will take part in the program.

**Management of the Surgical Patient**
**April 29-May 6, 1978, at Mauna Kea Beach Hotel, Kamuela, Hawaii**

Designed for all physicians—both surgeons and nonsurgeons—who participate in the care of surgical patients, this course deals with the practical aspects of management of a variety of surgical problems. An alternate series of concurrent sessions will review the fundamental concepts of molecular biology and applied anatomy, and offer various clinical electives and case discussions.

Tuition fee is $275, payable with a $125 room deposit to Stanford upon application for enrollment. Acceptance of enrollment assures firm hotel reservations with choice of type of room at prevailing Mauna Kea rates. Early application is advised.

**Cancer**
**March 27-31, 1978, at Stanford**

The present knowledge of the pathogenesis of cancer and clinical aspects of diagnosis, classification, staging, and management of malignant disorders will be reviewed in this course, which is intended for all physicians and surgeons who deal with problems related to neoplastic disease. Tuition: $265.

*The Postgraduate Medical Education program at Stanford University School of Medicine is fully accredited by the Council on Medical Education of the American Medical Association and approved for Category I Credit toward the California Medical Association's Certificate in Continuing Education. Application has been made for AAFP credit. Attendance certificates are provided.*

EARLY APPLICATION IS ADVISED — USE COUPON BELOW

**Clip and mail to**
OFFICE OF POSTGRADUATE MEDICAL EDUCATION
Stanford University School of Medicine, Room TA 145, Stanford California / Telephone (415) 497-5594

**ENROLL ME IN** ____ **Therapy** ($265 enclosed); ____ **Basic Science** ($265 enclosed);
____ **Cancer** ($265 enclosed); ____ **Hawaii Course** ($400 enclosed)

**SEND BROCHURES ON** ____ Therapy; ____ Basic Science; ____ Cancer; ____ Hawaii Course

NAME ____________________ Specialty ____________
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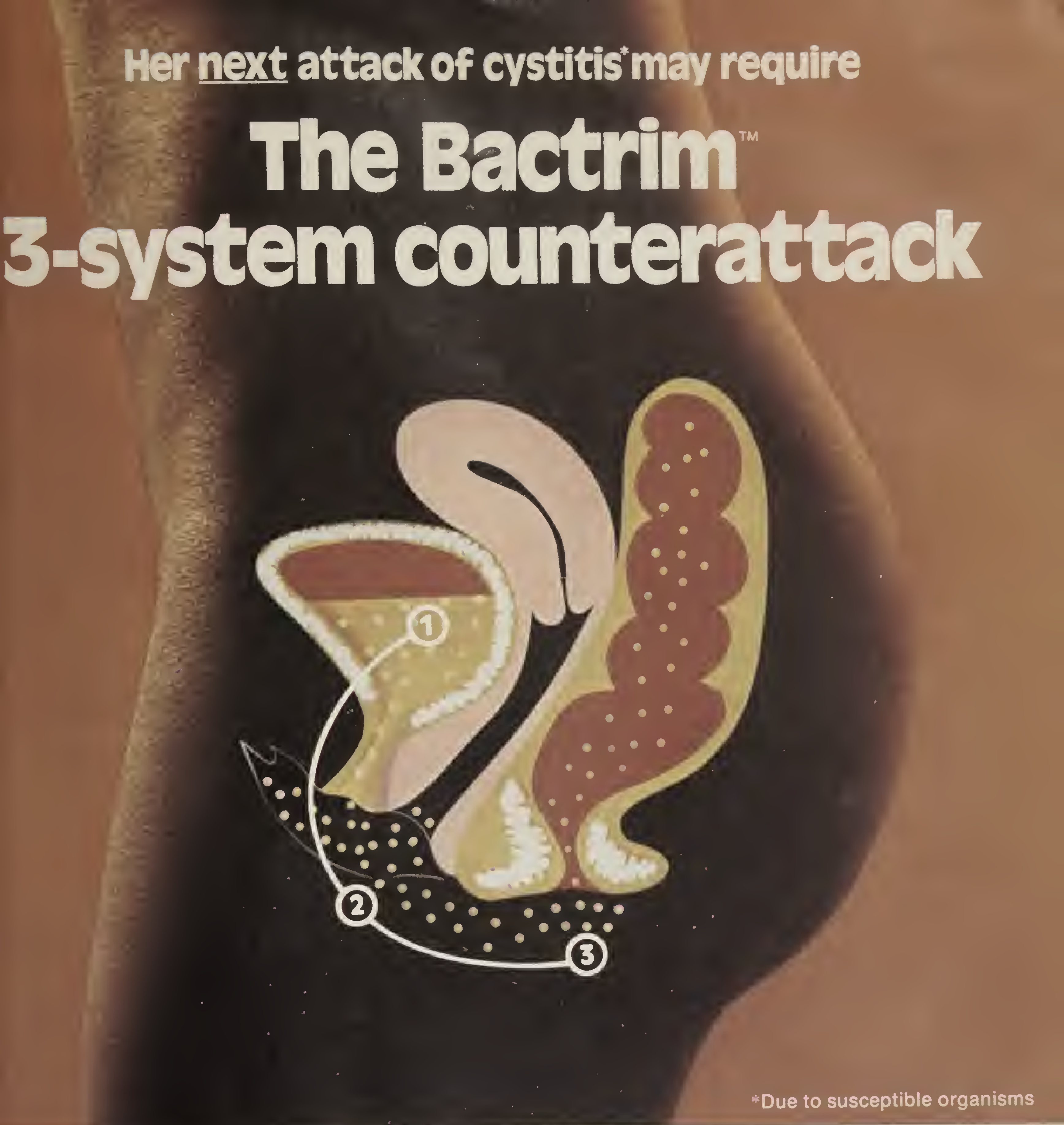
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1
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3

*Due to susceptible organisms

**Bactrim fights uropathogens in the urinary tract/vaginal tract/lower intestinal tract**

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Please see reverse side for summary of product information.

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# For recurrent attacks of urinary tract infection in women

# Bactrim™ DS Double Strength Tablets

Each tablet contains 160 mg trimethoprim and 800 mg sulfamethoxazole.

## Just one tablet b.i.d. for 10 to 14 days

- Action at urinary/vaginal/lower bowel sites helps eliminate reservoirs of infecting organisms
- Distinctive antibacterial action plus wide spectrum helps eradicate recurrent UTI
- Low incidence of bacterial resistance in community practice
- Convenient *b.i.d.* dosage provides day-and-night antibacterial control
- Contraindicated during pregnancy and the nursing period. During therapy, maintain adequate fluid intake; perform CBC's and urinalyses with microscopic examination.

**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms:** *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus morganii.* **It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination.** *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

**Also for the treatment of documented *Pneumocystis carinii* pneumonitis. To date, this drug has been tested only in patients 9 months to 16 years of age who were immunosuppressed by cancer therapy.**

The recommended quantitative disc susceptibility method (*Federal Register*, *37*:20527-20529, 1972) may be used to estimate bacterial susceptibility to Bactrim. A laboratory report of "Susceptible to trimethoprim-sulfamethoxazole" indicates an infection likely to respond to Bactrim therapy. If infection is confined to the urine, "Intermediate susceptibility" also indicates a likely response. "Resistant" indicates that response is unlikely.

**Contraindications:** Hypersensitivity to trimethoprim or sulfonamides; pregnancy; nursing mothers; infants less than two months of age.

**Warnings:** Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

**Precautions:** Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function.

**Adverse Reactions:** All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L. E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

**Dosage: Not recommended for infants less than two months of age.**

*Urinary Tract Infections:* Usual adult dosage—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days.

Recommended dosage for children—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. A guide follows:

*Children two months of age or older*

| Weight | | Dose—every 12 hours | |
|---|---|---|---|
| lbs | kgs | Teaspoonfuls | Tablets |
| 20 | 9 | 1 teasp. (5 ml) | ½ tablet |
| 40 | 18 | 2 teasp. (10 ml) | 1 tablet |
| 60 | 27 | 3 teasp. (15 ml) | 1½ tablets |
| 80 | 36 | 4 teasp. (20 ml) | 2 tablets or 1 DS tablet |

For patients with renal impairment:

| Creatinine Clearance (ml/min) | Recommended Dosage Regimen |
|---|---|
| Above 30 | Usual standard regimen |
| 15-30 | ½ the usual regimen |
| Below 15 | Use not recommended |

*Pneumocystis carinii pneumonitis:* Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

**Supplied:** *Double Strength (DS) tablets*, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100; Tel-E-Dose® packages of 100. *Tablets*, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 40, available singly and in trays of 10. *Oral suspension*, containing in each teaspoonful (5 ml) the equivalent of 40 mg trimethoprim and 200 mg sulfamethoxazole, fruit-licorice flavored—bottles of 16 oz (1 pint).

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## JULY

### 21st ANNUAL RUIDOSO FAMILY PRACTICE SEMINARO

July 17-20, 1978. Headquarters Inn, of the Mountain Gods at Mescalero, New Mexico. Sponsors: New Mexico Chapter of the American Academy of Family Physicians. Contact: Bob Reid, Convention Dir., P. O. Box 456, Sunland Park, N.M. 88063. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

## MONTHLY OR WEEKLY

### HEADACHE ROUNDS

Tuesday afternoons or Thursday mornings weekly. Sponsor: Headache Group of the Southwest. Contact: Peggy Voigt, 2610 W. Bethany Home Rd., Phoenix, AZ 85017, or phone 242-6646.

### SHRINE MEDICS MEETING

Second Tuesday of each month, Doctors Hospital, 5:45 p.m., J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

### OFFICE PSYCHIATRY FOR THE PRIMARY PROVIDER

2nd Monday of month, 4811 N 7th Street, Phoenix, AZ. Sponsor Arizona Health Plan Contact T R. Bittker, M.D . Box 5000, Phoenix AZ 85010 Approved for required hours toward the ArMA Certificate in Continuing Medical

### CLINICAL IMMUNOLOGY, ALLERGY AND RHEUMATOLOGY ROUNDS

Every Friday Noon-1 p.m. Sponsor U of A College of Medicine, Dept. of Internal Medicine, Clinical Immunology Section. Contact John Boyer, M.D . U. of A. College of Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### ENDOCRINOLOGY SEMINAR

Every Thursday, Noon-1 p.m., 1st, 3rd & 5th Thursday—Rm N318, VA Hospital, 2nd & 4th Thursday, Rm 6505, Tucson Medical Center, Sponsor U of A College of Medicine, Department of Internal Medicine, Department of Internal Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### HEMATOLOGY-ONOCOLOGY CLINICAL CONFERENCE

Every Tuesday, Noon-1 p.m. 1st, 3rd & 5th Tuesdays—Rm. 6505, AZ Medical Center. 2nd & 4th Tuesdays—Rm. N318, Veterans Adm Hospital. Sponsor U. of A College of Medicine, Dept of Internal Medicine Contact Sidney Salmon, M.D., U. of A. College of Medicine, Tucson, AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### GRAND WARD ROUNDS—TRAUMA

Every Tuesday, 8 a.m Arizona Medical Center, Tucson, AZ. Sponsor U. of A. College of Medicine Surgery Dept., Trauma Section. Contact Martin Silverstein, M D U of A College of Medicine Tucson AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### PEDIATRIC GRAND ROUNDS

Every Tuesday, 12:30 p.m. - 1:30 p.m. Alternates between Tucson Medical Clinic and U of A Health Sciences Center. Sponsor U of A College of Medicine, Dept. of Pediatrics. Contact: Hugh Thompson, M.D., 1501 N. Campbell, Tucson, AZ. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### VASCULAR RADIOLOGY

January thru June 1978. 7:30 a.m. to 8:30 a.m. every Friday. Dept. of Radiology. Sponsor: Dept. of Radiology, U of A Health Sciences Center. Contact: I. M. Freundlich, M.D., U of A Health Sciences Center Tucson, AZ 85724. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### PROBLEM CASE WORKSHOPS

3rd Monday of each month 7 30 a m Room 4410, Arizona Medical Center, Tucson, AZ Sponsor Division of Ophthalmology, U. of A College of Medicine Contact H E Cross M.D., Ph D , Arizona Medical Center, Dept of Surgery, Tucson, AZ Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education

### MEDICAL GRAND ROUNDS

Every Wednesday. Noon-1 p m 1st 3rd & 5th Wednesday—Staff Conf Rm VA Hospital 2nd & 4th Wednesday—Rm 5403, Arizona Medical Center Sponsor U of A College of Medicine. Dept of Internal Medicine Contact Jay Smith, M D., U of A College of Medicine, Tucson AZ 85721 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### NEUROSCIENCES SEMINAR

Every Friday, 7:30 a.m. U of A Health Sciences Center, Rm. 7505, Tucson, AZ. Sponsor: Dept. of Neurology. Contact: Colin R. Bamford, M.D. & Jose F. Laguna, M.D., Dept. of Neurology, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### NEUROLOGY GRAND ROUNDS

Every Friday, 12 noon. 1st, 3rd & 5th Fridays, U of A Health Sciences Center, Rm. 7505. 2nd and 4th Fridays, Veterans Administration Hospital. Sponsor: U of A Health Sciences Center, Dept. of Neurology. Contact: William A. Sibley, M.D., Dept. of Neurology U of A Health Sciences Center, Tucson, AZ 85724. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### PSYCHIATRIC GRAND ROUNDS

Every Wed Sept to May 4-5 30 p m Rm 8403 Arizona Medical Center Tucson AZ Sponsor U of A College of Medicine Dept of Psychiatry Contact Alan Levenson, M D , U of A College of Medicine, Tucson, AZ 85721 Approved for 1-1/2 required hour per session toward the ArMA Certificate in Continuing Medical Education

### NEUROPATHOLOGY REVIEW CONFERENCE

Thursdays, 8:30 a.m., Rm 5120 Arizona Health Sciences Center. Sponsor: U of A College of Medicine. Contact: Peter C. Johnson, M.D., 1501 N. Campbell Ave., Tucson, AZ 85724. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### RESIDENT'S CONFERENCE

Wednesday/weekly 5-6 p.m., Diag. Radiology Conf. Rm., U of A Health Sciences Center. Sponsor: U of A Health Sciences Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., U of A Health Sciences Center, Tucson, AZ 85724. Approved for one required hour per session toward the ArMA Certificate in Continuing Medical Education.

### TRAUMA CONFERENCE

Every Thursday, 4-5:00 p.m. Health Sciences Center, Rm. 5505, Tucson, AZ. Sponsor: U of A College of Medicine, Dept. of Surgery. Contact: Martin Silverstein, M.D., Dept. of Surgery, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### STAFF EDUCATION CONFERENCE

Wednesdays, Weekly, 1 p m Arizona State Hospital, Phoenix, AZ Sponsor Arizona State Hospital Contact Howard E. Wulsin, M.D , Arizona State Hospital, 2500 E Van Buren, Phoenix, AZ 85008 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### SURGICAL GRAND ROUNDS

### 4TH TUESDAY OF EACH MONTH

Hospital Auditorium, Baptist Hospital, Phoenix Sponsor Baptist Hospital Phoenix Contact James B Shields, M.D , 6036 N 19th Ave., Phoenix, AZ 85015 Approved for 1-1/2 required hours per month toward the ArMA Certificate in Continuing Medical Education

### PATIENT STAFFING CONFERENCE

Three times weekly Camelback Hospital Phoenix, AZ Sponsor Camelback Hospital Contact Medical Director, Camelback Hospital, 5055 N 34th St , Phoenix, AZ 85018. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### PEDIATRIC GRAND ROUNDS

Tuesday 7:30 - 8:30 a.m. in Phoenix: 1st Tue. - Phoenix Indian Hospital,

# SOUTHWESTERN CARDIOVASCULAR SYMPOSIUM

**March 16, 17 and 18, 1978**
**Mountain Shadows Resort**
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Los Angeles, California

John Manley, M.D.
Milwaukee, Wisconsin

John Vogel, M.D.
Santa Barbara, California

Arthur Weyman, M.D.
Indianapolis, Indiana

Registration is $125.00. Participants will receive 18 required hours credit. For more information:

Richard Mushorn, M.D., Program Chairman or Robert J. Lundin II, Director, Public Relations
St. Luke's Hospital Medical Center, 525 North 18th Street, Phoenix, Arizona 85006 • (602) 258-7373

2nd Tue. - Maricopa County Hospital, 3rd Tue. - Good Samaritan Hospital, 4th Tue. - St. Joseph's Hospital Sponsor: Phoenix Hospital's Affiliated Pediatric Program. Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

MONTHLY MEDICAL EDUCATION SEMINAR
Third Monday of the Month, 6 30 p.m., Kiva Conference Room, Phoenix Memorial Hospital. Sponsor Medical Staff of Memorial Hospital. Contact George Scharf, M.D. 1201 South 7th Avenue, Phoenix, AZ 85007 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

COUNTER TRANSFERENCE GROUP
Weekly, Thurs 8-10 p m Sponsor. Phoenix Psychiatric Council Contact: James E. Campbell, M.D. 5051 N 34th St., Phoenix, AZ 85018. Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

DESERT SAMARITAN HOSPITAL
Wednesday Evenings 7 p.m. Sponsor Desert Samaritan Hospital Contact L. A Rosati, M.D. Laboratory, Desert Samaritan Hospital, Mesa, AZ 85202 Approved for required hours toward the ArMA Certificate in Continuing Medical Education

# Taos Medical Symposium

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Advance registration required. Registration fee of $100.00 includes continental breakfast for two each morning, transfers each day to and from the ski area, cross country ski trips, tours of local museums and art galleries, and hosted receptions. Registration deadline January 31, 1978. Limited to 100 participants.

For further information contact:
Albuquerque & Bernalillo County Medical Association
2650 Yale Blvd., SE Suite 103
Albuquerque, New Mexico 87106
Phone (505) 247-3711

### PULMONARY DISEASE GRAND ROUNDS

Mondays—12 Noon. D-5 North Conference Rm. Good Samaritan Hospital, Phoenix, AZ Sponsor Pulmonary Disease Teaching Service, Good Samaritan Hospital. Contact Bernard E. Levine, M D., Pulmonary Function Laboratory. Good Samaritan Hospital, 1033 E. McDowell Hospital. Phoenix. AZ 85006 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

### CLINICAL CANCER CONFERENCE

3rd Wednesday every month, Butler Bldg Conference Room, Good Samaritan Hospital, Phoenix, AZ. Sponsor Good Samaritan Hospital. Contact. John A Bruner, M.D., 926 E. McDowell Road, Phoenix, AZ 85006 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### TUMOR BOARD CONFERENCE

Every Friday at Noon, Kiva Conference Room, Phoenix Memorial Hospital. Sponsor Phoenix Memorial Hospital. Contact: Howard Kimball, M D, 333 West Thomas Road. Phoenix, AZ 85013. Approved for credit toward the ArMA Certificate in Continuing Medical Education

### MONTHLY MEDICAL EDUCATION SEMINAR

Third Monday of the Month, 6:30 p m. Kiva Conference Room, Phoenix Memorial Hospital Sponsor Medical Staff of Memorial Hospital Contact George Scharf. M D. 1201 South 7th Avenue, Phoenix, AZ 85007 Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education

### MONTLHY MEETING OF TUCSON RADIOLOGISTS

Last Tues. of Month, Plaza International, Tucson, AZ. Sponsor: U. of A. Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., Arizona Medical Center, Dept. of Radiology, Tucson, AZ 85724. Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

### FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor Medical Staff. Contact: R. C Good, M D., Dir. of Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuinq Medical Education.

### MORBIDITY & MORALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor Medical Staff. Contact R. C. Good, M D., Dir. Medical Education, 7300 E. 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education

### CLINICAL PATHOLOGICAL CONFERENCE

4th Monday Monthly 12 45 p m Scottsdale Memorial Hospital Scottsdale AZ Sponsor Medical Staff Contact R. C Good M.D Director of Medical Education. 7300 E 4th St. Scottsdale. AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education

### MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p m., Scottsdale Memorial Hospital, Scottsdale, AZ. Sponsor Medical Staff. Contact. R. C. Good M.D, Dir of Medical Education, 7300 E 4th St., Scottsdale, AZ. Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

### CARDIOLOGY CONFERENCE

Weekly—Friday 8-9 a.m., St. Mary's Hospital Auditorium, Tucson, AZ. Sponsor St Mary's Hospital Contact: A. L Forte, M.D., St. Mary's Hospital, Tucson, AZ 85724 Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

### GRAND ROUNDS

Each Thursday 7 a m.-8 a.m. St Mary's Hospital and Health Center. Sponsor Depts of Medicine, Surgery. Radiology. Pathology and Family Practice. Contact. Richard Silver, M D, Chairman, Medical Education and Library Committee. Century Medical Plaza, Suite 160, 1701 West St. Mary's Road, Tucson, AZ 85703 Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education

### GI CONFERENCE

(Special Program with U. of A. Consultants) 4th Friday, 1 p.m., T-5. Sponsor VA Hospital Phoenix Contact Jasper L. McPhail. M.D. VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### G.I.-RADIOLOGY CLINICAL CORRELATION CONFERENCE

**Each Tuesday, 1 p.m., T-5. Sponsor: VA Hospital Phoenix. Contact: Jasper L.** McPhail, M D., Veterans Administration Hospital, 7th & Indian School Rd., Phoenix, AZ Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### GASTROENTEROLOGY CONFERENCE

1st and 3rd Tuesday, 1 p.m., T-5. Sponsor VA Hospital Phoenix, Contact. Jasper L. McPhail, M D VA Hospital, 7th & Indian School Rd, Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### CARDIOLOGY CONFERENCE

2nd Thursday, 1 p.m. T-5 Sponsor VA Hospital Phoenix. Contact Jasper L. McPhail, M D. VA Hospital, 7th & Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education

### CLINICOPATHOLOGY CONFERENCE

4th Thursday of 3rd Mo (Mar, June, Sept & Dec), 1 p m, T-5 Sponsor VA Hospital Phoenix. Contact Jasper L McPhail, M.D VA Hospital. 7th & Indian School Rd. Phoenix, AZ Approved for required hours toward the ArMA Certificate in Continuing Education

### MEDICAL-SURGICAL CHEST CONFERENCE

1st and 3rd Thursday, 1 p.m, T-5 Sponsor VA Hospital Phoenix. Contact Jasper L McPhail, M.D. VA Hospital, 7th & Indian School Rd. Phoenix, AZ Approved for required hours toward the ArMA Certificate in Continuing Medical Education

### CANCER SYMPOSIUM (fomerly Tumor Board)

Each Wednesday, 1 p m, T-5 Sponsor VA Hospital Phoenix Contact Jasper L McPhail, M.D., VA Hospital, 7th & Indian School Rd, Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### SURGERY-PATHOLOGY CONFERENCE

Each Thursday. 7 a m., 2128 Sponsor VA Hospital Phoenix Contact Jasper L McPhail, M D., VA Hospital, 7th & Indian School Rd. Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### DERMATOLOGY CONFERENCE

1st, 2nd & 3rd Wednesday Sponsor VA Hospital Phoenix. Contact Jasper L McPhail, M.D. VA Hospital, 7th & Indian School Rd., Phoenix, AZ Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

### MEDICAL SERVICE GRAND ROUNDS

Each Friday 11 a.m, T-5 Sponsor VA Hospital Phoenix Contact Jasper L McPhail, M D., VA Hospital, 7th & Indian School Rd., Phoenix, AZ Approved for required hours toward the ArMA Certificate in Continuing Medical Education

### HEPATOLOGY CONFERENCE

2nd and 4th Tuesday, 1 p.m., 2128 Sponsor VA Hospital Phoenix Contact Jasper L. McPhail, M D, VA Hospital, 7th & Indian School Rd. Phoenix, AZ Approved for required hours toward the ArMA Certificate in Continuing Medical Education

### UROLOGY-PATHOLOGY CONFERENCE

Each Wednesday. 7 a m., 2128 Sponsor VA Hospital Phoenix. Contact Jasper L McPhail. M D. VA Hospital, 7th and Indian School Rd., Phoenix, AZ. Approved for required hours toward the ArMA Certificate in Continuing Medical Education

### MEDICAL SURGICAL G.I. CONFERENCE

**1st & 3rd Friday - 2 p.m. -2128 Sponsor: VA Hospital, Phoenix. Contact: Jasper L. McPhail, M.D., VA Hospital, 7th Ave. & Indian School Rd., Phoenix. Approved for required hours toward the ArMA Certificate in Continuing Medical Education.**

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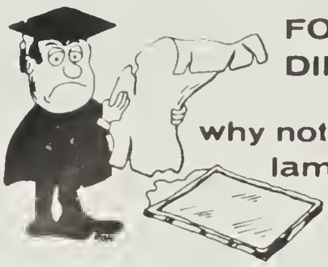

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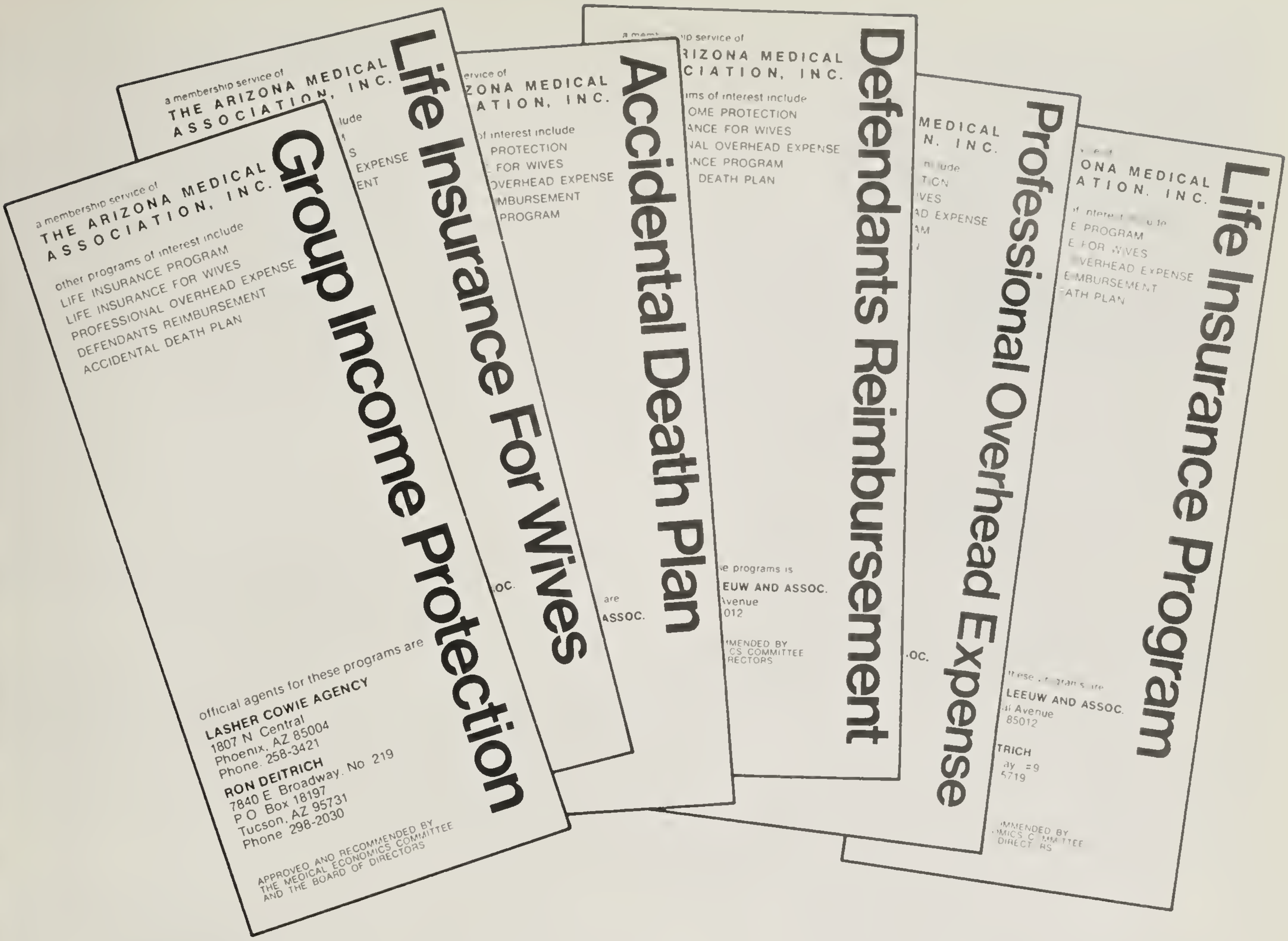

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